

U.S. Marines in the Persian Gulf, 1990-1991

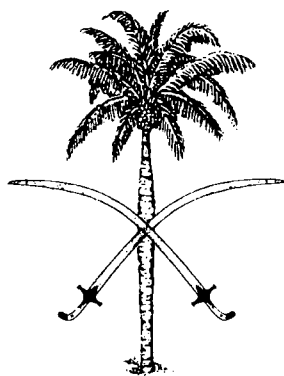
COMBAT SERVICE SUPPORT IN DESERT SHIELD AND DESERT STORM



HISTORY AND MUSEUMS DIVISION
HEADQUARTERS, U.S. MARINE CORPS
WASHINGTON, D.C.

COVER: "The Terminator" LVS pulling an 870 trailer with a D7 Bulldozer. A Saudi male with his camels are in the foreground. Two helos with external loads fly above the whole scene.(Painting by CWO-2 Charles G. Grow, USMC)

U.S. Marines in the Persian Gulf, 1990-1991 COMBAT SERVICE SUPPORT IN DESERT SHIELD AND DESERT STORM



by
Major Steven M. Zimmeck
U.S. Marine Corps, Retired

HISTORY AND MUSEUMS DIVISION
HEADQUARTERS, U.S. MARINE CORPS
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Foreword

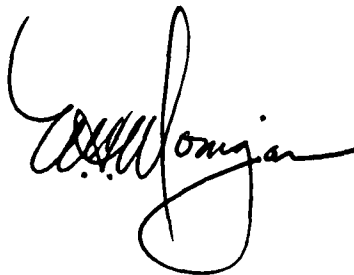
This monograph tells the story of the Marines and sailors of the 1st Force Service Support Group, the 2d Force Service Support Group, Marine Wing Support Group 37, and the 3d Naval Construction Regiment whose combined efforts gave the I Marine Expeditionary Force the ability to eject Iraqi forces from Kuwait during Operation Desert Storm. This document is part of a preliminary series of official Marine Corps histories that cover Marine Corps operations in the Gulf War.

During the Persian Gulf crisis, the History and Museums Division sent a team to Saudi Arabia to produce first-hand accounts of unit operations. In November 1990, five Reserve officers from the Mobilization Training Unit (MTU) (History)-DC-7 arrived in Saudi Arabia, deployed to different commands, accompanied their units throughout the battle, and produced powerful narratives on the operations of I Marine Expeditionary Force, the 1st Marine Division, the 2d Marine Division, and Marine Forces Afloat. Unforeseen circumstances prevented a logistics history from being included in the series, so the Secretary of the Navy recalled Major Steven M. Zimmeck, USMC (Ret), to active duty to complete this account of Marine Corps combat service support in Operations Desert Shield and Desert Storm.

Major Zimmeck is a career Marine Corps logistician who served tours of duty with the 3d Marine Aircraft Wing, the 3d Marine Division, the 1st Force Service Support Group, Headquarters United States Marine Corps, and the Royal Saudi Marines. He has accumulated more than seven years of desert logistics experience in the Middle East and the United States. During the Persian Gulf crisis, Major Zimmeck served as a logistics watch officer in the Headquarters Marine Corps Crisis Response Cell and, later, as the first logistics advisor to the Royal Saudi Marines. In the early 1980s he served at Headquarters Marine Corps as the force service support group table of organization sponsor and prior to retirement in 1994, served as the logistics officer's sponsor. After retirement and as a consultant, he co-authored the final phase of the Marine Corps Logistics Planning Factor Study. In 1995, Major Zimmeck was recalled to active duty for two years to complete this project. Major Zimmeck is a graduate of Amphibious Warfare School and Command and Staff College and holds a bachelor of arts degree in history from Wittenberg University, a master of arts degree in Arab studies from Georgetown University, and a master of business administration degree in finance from George Washington University.

This monograph is predominantly based upon documentation collected during and immediately after Desert Shield and Desert Storm. Unit command chronologies and interviews recorded by the Battlefield Assessment Team served as the basis of a comment edition which was sent out to key participants in the events depicted. These comments were then incorporated into the final narrative. This methodology produced a history that approaches the accuracy and vigor of the MTU's first-hand accounts.

As in most of the publications of the History and Museums division, the production of this monograph was a team effort. Dr. Jack Shulimson, Mr. Charles Smith, and Ms. Wanda Renfrow of the History Writing Unit together with Mr. Charles Melson, the Chief Historian, provided the final review of the manuscript. Mr. James E. Cypher, an intern from Loyola University in New Orleans, assisted with the appendices, especially "The Glossary and List of Abbreviations" and the "Chronology of Events."

A handwritten signature in black ink, appearing to read "M. F. Monigan". The signature is stylized with a large, looping initial "M" and a long, sweeping underline.

M. F. Monigan
Colonel, U.S. Marine Corps
Director of Marine Corps History and Museums

Preface

My goal for this volume was an accurate and readable narrative of I Marine Expeditionary Force's combat service support during Operations Desert Shield and Desert Storm. I concentrated on the 1st and 2d Force Service Support Groups, Marine Wing Service Support Group 37, and the 3d Naval Construction Regiment to relate how their plans, preparations, and activities meshed and supported the Marine force's scheme of maneuver and fire support plan. The deployment of the force and the reconstitution of Marine Corps capabilities after the crisis were also important stories that required telling. I researched and wrote drafts before contacting knowledgeable participants in the war. This produced a good basis for Desert Storm veterans to fill in gaps, correct mistakes, and provide additional information that improved the quality of the text.

This monograph would not have been published without the professional efforts of the staff of the Marine Corps Historical Center. In that regard, I would like to thank and acknowledge the contributions of Brigadier General Edwin H. Simmons (Ret); Colonel Michael F. Monigan; Mr. Benis M. Frank; Lieutenant Colonel Thomas A. Richards (Ret); Lieutenant Colonel Dave Beasley, Jr. (Ret); Lieutenant Colonel Leon Craig, Jr.; Dr. Jack Shulimson; Ms. Catherine A. Kerns; Mr. W. Stephen Hill; and Mr. Charles R. Smith. I would like to extend a special thanks to Mr. George C. MacGillivray. Also, I am grateful for the advice and counsel that I received from the members of the Desert Storm historical MTU. In particular, I would like to thank Colonel Dennis P. Mroczkowski, Lieutenant Colonel Charles H. Cureton and, especially, Lieutenant Colonel Ronald J. Brown (Ret).

Outside of the Marine Corps History and Museums Division, I would like to express my thanks to Lieutenant General James A. Brabham, Jr. (Ret); Colonel William D. Bushnell (Ret); Lieutenant Colonel Daniel K. Franklin; Colonel Thomas S. Woodson; Colonel Robert L. Songer; Lieutenant Colonel Charles C. Cvrk; Mr. Nicholas M. Linkowitz; Lieutenant Commander David W. Tomlinson; Major Jeffery D. Lee; Mr. Joseph H. Jeu; Ms. Susan A. Meeker; Major Gregory R. Caldwell; Mr. Jan Healey; and Mr. Chuck Hamilton.



Steven M. Zimmeck
Major, U.S. Marine Corps, Retired

Table of Contents

Foreword .....	.iii
Preface .....	.v
Table of Contents .....	.vii

The First Shot in the War of Logistics 2 August-2 September 1990

Gathering the Pieces .....	.2
BSSG-1 .....	.7
Drawing the Mameluke .....	.12
Tools of the Trade .....	.16
Creating the General Logistics Support System .....	.20
Extending Direct Support to Regimental Combat Team 7 .....	.28
Extending Direct Support to Marine Aircraft Group 70 .....	.30
A Logistics Snapshot One Month After the Iraqi Invasion .....	.33

Defending Jubayl 3 September-31 October 1990

The Situation .....	.34
1st FSSG Reorganizes .....	.35
Supporting the 3d MAW .....	.39
The Seabees Arrive .....	.40
Jubayl Naval Air Facility .....	.41
King Abdul Aziz Naval Air Station .....	.43
Ras Al Ghar .....	.44
Shaikh Isa .....	.44

Supporting the 1st Marine Division

September: Supply Point Distribution .....	.45
October: Mobile Resupply .....	.49
General Support of the MEF .....	.53
Motor Transport .....	.53
Landing Support .....	.54
Medical and Dental .....	.55
Supply .....	.55
Maintenance .....	.56
Engineer Operations .....	.58
Headquarters and Support Group .....	.59
Marine Forces Afloat .....	.60
Three Months after the Invasion .....	.61

Switching to the Offense November and December 1990

The Situation	62
How to Merge the 1st and 2d FSSGs?	63
The 1st FSSG Restructures and Refocuses	67
The Establishment of GSG-2	67
DSG-1, November-December 1990	70
The Seabees Prepare for Reinforcements and the Offensive	72
Reinforcements	74
Establishing the Direct Support Command	77
The Year Ends	80

Desert Shield Ends and Desert Storm Begins 1-31 January 1991

The Situation	82
Leaning North: 1-16 January 1991	82
Marine Wing Support Group 37	82
Setting Up Kibrit	84
DSG-1 Reorganizes and Deploys to the Field	86
Ingenuity	92
DSG-2 Deploys to the Field	96
Desert Storm Begins: 17-29 January 1991	98
Marine Wing Support Group 37	99
1st Force Service Support Group	99
The Direct Support Command	101
Iraq Attacks Near Qaraah and Khafji 29-31 January 1991	106
Conclusion	112

Flexibility and Forward to Attack Positions 1-23 February 1991

Moving to the Attack	112
I MEF Changes Its Plan	115
The Decision	115
Khanjar	117
Lonesome Dove	118
The Seabees	119
The Buildup	120
The 2d Marine Division and DSG-2 Move West	126
Pushing Forward to the Ground War: Final Plans, Preparations, Problems, and Positions	129
The Direct Support Command	129
Direct Support Group 2	131

Direct Support Group 1	134
Combat Service Support Detachment 91	140
MWSG-37 and The Seabees Final Preparations	140
Conclusion	141

The Ground War 24-28 February 1991

G-Day: 24 February 1991	142
The 2d Marine Division Zone of Action	143
The 1st Marine Division Zone of Action	147
G+1: 25 February 1991	150
The 2d Marine Division Zone of Action	150
The 1st Marine Division Zone of Action	154
G+2: 26 February 1991	159
The 2d Marine Division Zone of Action	159
The 1st Marine Division Zone of Action	162
The Direct Support Command	166
The Deluge of Enemy Prisoners of War	166
G+3: 27 February 1991	168
The 2d Marine Division Zone of Action	169
The 1st Marine Division Zone of Action	170
The Lost Convoy	172
G+4: 28 February 1991	173
The 1st Marine Division Zone of Action	173
The 2d Marine Division Zone of Action	173
Brigade Service Support Group 5	174
Conclusion	176

Leaving the Gulf with Good Order and Discipline 1 March-10 October 1991

Introduction and BSSG-5	176
First in First Out; Last in Last Out: 1 March-22 April 1991	177
Deactivation and Home	177
A Marine Corps Shame	182
Operation Desert Cleanup	182
Marine Forces Southwest Asia: 21 April-10 October 1991	184
21 April-24 June 1991	184
24 June-10 October 1991	188
Conclusion	190

Notes	193
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Appendix A: CSS Command Relationships	212
---------------------------------------------	-----

Appendix B: 1st FSSG/2d FSSG Organizational Chart	214
Appendix C: Command and Staff	215
Appendix D: List of Abbreviations and Glossary	218
Appendix E: Chronology of Significant Events	225
 Index	 230

U.S. Marines in the Persian Gulf, 1990-1991

Combat Service Support in Desert Shield and Desert Storm

The First Shot in the War of Logistics:
2 August-2 September 1990

When historians, strategists, and tacticians study the Gulf War—what they will study most carefully will be logistics. This was a war of logistics.¹

The Iraqi invasion and takeover of Kuwait on 2 August 1990 threatened the stability of Iraq's neighbors and the disruption of the world oil supply. Faced with this crisis, U.S. President George Bush drew a "line in the sand" in Saudi Arabia and formed a grand coalition of European and Arab nations to throw back the Iraqi Army and dampen the ambitions, if not bring down the regime, of Iraq's unpredictable dictator, Saddam Hussein. At the heart of the coalition were the U.S. Armed Forces with the U.S. Marine Corps deploying along the cutting edge. The first challenge of the crisis would be the rapid delivery of troops and materiel to the Persian Gulf.

On 2 August, the U.S. Joint Chiefs of Staff ordered two Navy carrier battle groups to the Persian Gulf. Five days later, the United States Central Command (USCentCom), the unified command responsible for the Persian Gulf, ordered to Saudi Arabia a brigade of the lightly armed U.S. Army 82d Airborne Division, U.S. Air Force fighters from the 1st Tactical Fighter Wing, and two squadrons of maritime prepositioning ships (MPS) carrying Marine Corps equipment and supplies. Rapidly following this action, USCentCom ordered a second brigade from the 82d Airborne Division, the Army's mobile 101st Airborne Division (Air Assault), additional air and naval forces, and the 7th Marine Expeditionary Brigade to the Persian Gulf. USCentCom intended to defend Saudi Arabia by bombing Iraqi forces by air and by establishing ground defensive positions around the two major Saudi ports at Dhahran and Jubayl.²

The first month after the Iraqi invasion was a hectic period for Marine units as American forces rapidly moved to the Gulf to defend Saudi Arabia. The 7th Marine Expeditionary Brigade (7th MEB) was the first U.S. combat organization to arrive in the Persian Gulf with the necessary blend of maneuver, fire power, and logistics capability required to defeat Iraqi forces in the open desert.

It was the leading element of the I Marine Expeditionary Force (I MEF), which served as the Marine Corps command component (MarCent) of USCentCom. Similar to all Marine air-ground task forces, I MEF consisted of headquarters, ground combat, aviation combat, and combat service support elements, able to task-organize into smaller units.* Lieutenant General Walter E. Boomer, who served as a company commander during the Vietnam War and later as an advisor to a South Vietnamese infantry battalion, commanded I MEF. Major General James M. Myatt, a native Californian who served two combat tours in Vietnam, led the 1st Marine Division. Major General Royal N. Moore, Jr., a Vietnam War veteran who flew both fixed-wing aircraft and helicopters, directed the 3d Marine Aircraft Wing. Brigadier General James A. Brabham, Jr., a native Pennsylvanian who served twice in Vietnam and as the Deputy J-4 for logistics at USCentCom, commanded I MEF's combat service support element—the 1st Force Service Support Group (1st FSSG).³

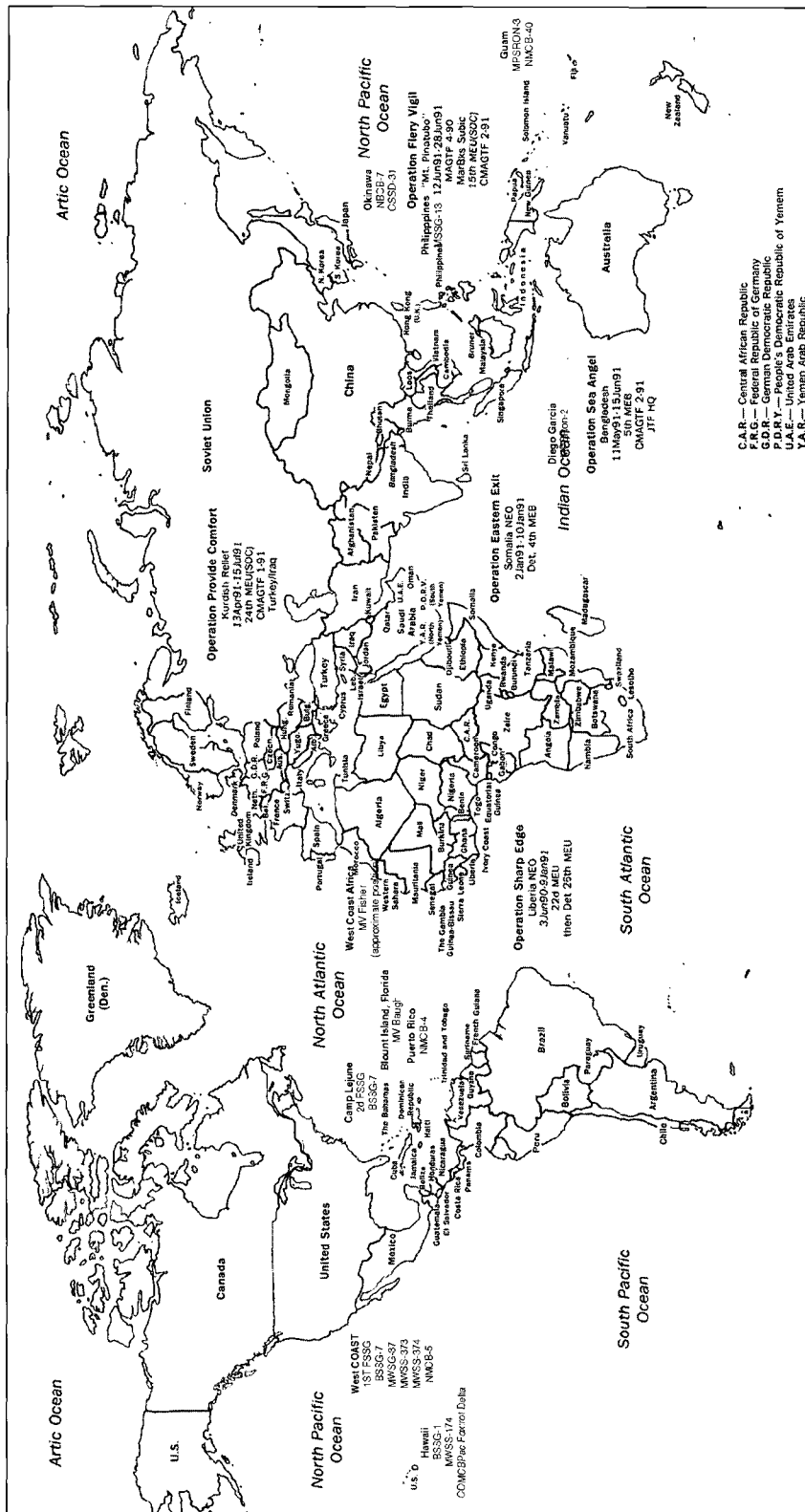
Gathering the Pieces

The Marine Corps' deployment to the Persian Gulf, constituting as it did the largest Marine Corps movement since World War II, was dependent on the sealift provided by the Navy and airlift provided by the Air Force. Both sealift and airlift were magnificent.⁴

On 2 August 1990, the 1st FSSG, headquartered at Camp Pendleton, California, halfway around the world from the Persian Gulf, was organized into eight battalions that provided engineer, motor transportation, supply, maintenance, landing support, medical, dental, and other services, such as postal, disbursing, legal, exchange, and graves registration. Like most Marine Fleet Marine Force units, it had the ability to task organize and deploy into smaller organizations such as Marine expeditionary unit service support and brigade service support groups.

Colonel Alexander W. Powell, a former artilleryman who served two tours in Vietnam, commanded Brigade Service Support Group 7 (BSSG-7), 1st FSSG, which consisted of a small staff of 10 officers and 25 enlisted Marines, located in Building 1141 at Camp Pendleton.⁵ While Iraqi *Republican Guard* divisions invaded Kuwait, Colonel Powell and his staff planned a deployment to Turkey to participate in Display Determination 90, a routine NATO exercise.⁶ For this exercise, 1st FSSG transferred operational control of BSSG-7 to the 7th Marine Expeditionary Brigade (7th MEB), located 120 miles east of Camp Pendleton in the Mojave Desert at Marine Corps Combined Arms Combat Center, Twentynine Palms, California. The 7th MEB consisted of the brigade's command

*Marine Air-Ground Task Force (MAGTF) doctrine establishes three different-sized units each having command, ground combat, aviation combat, and combat service support elements. The biggest MAGTF is the MEF, followed in size by the Marine Expeditionary Brigade (MEB), with the Marine Expeditionary Unit (MEU) being the smallest.



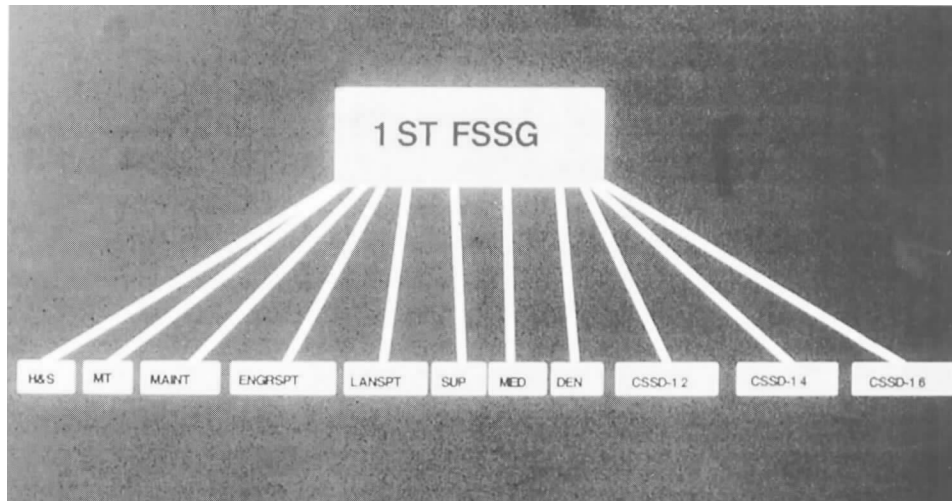


Photo courtesy of LtGen James A. Brabham, Jr.

The 1st FSSG, like all FSSGs, was organized into eight functional battalions. Its three combat service support detachments (CSSDs) were established to meet local requirements in California and Arizona.

element, Regimental Combat Team (RCT) 7, Marine Aircraft Group 70 (MAG-70), and BSSG-7.

The 7th MEB was a maritime prepositioning squadron brigade. Maritime prepositioning of equipment and supplies was a concept pioneered by the Marine Corps. According to this doctrine, a Marine brigade's set of equipment and 30 days of supplies were preloaded on ships prepositioned in friendly ports located near potential crises areas. To confront an international emergency, the brigade's personnel would fly to a safe location while the ships would sail to meet them. The brigade along with a Navy support element (NSE) would unload the ships, distribute the equipment, and rapidly create a potent and sustainable combat force in a troubled region.* The Marine Corps maintained three maritime prepositioning ships squadrons (MPSRons) tied to three dedicated Marine expeditionary brigades. MPSRons, the Marine brigades, and the NSEs regularly trained together. The 7th MEB was associated with MPSRon-2, consisting of five civilian-owned ships located 4,600 kilometers from the Port of Al Jubayl, at the British island of Diego Garcia.

Four days after Iraq invaded Kuwait, Major General John I. Hopkins, a veteran of two tours in Vietnam who once commanded the 2d Force Service Support Group and now the 7th MEB, ordered BSSG-7 to "stand-up" its wartime table of organization, to fly to Saudi Arabia, and to marry up with MPSRon-2 at

*A Maritime Prepositioning Force consists of the MPS squadron, the MEB, a Navy support element (NSE), and a command element. NSEs are task organizations which often consist of cargo handlers and amphibious Seabees from the U.S. Navy's two amphibious construction battalions. (Author's telephone intvws, dtd 21Feb91, with Mr. Nicholas M. Linkowitz, Col Alexander W. Powell USMC (Ret), Dr. Robert J. Schneller, and MSChief Alfred H. Jensen).

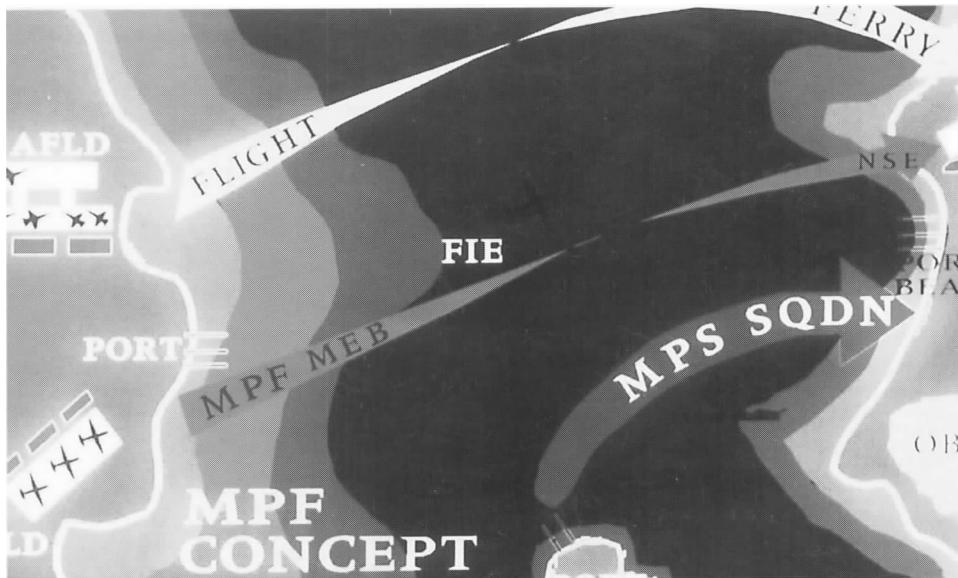


Photo courtesy of LtGen James A. Brabham, Jr.

A MPF squadron deployed from a strategically located harbor reaches port in a troubled area. A Marine Expeditionary Brigade (MEB) would fly in echelon (FIE) to the crisis location, unload the MPS, and rapidly create a logistically sustainable combat force. Marine fixed-wing aircraft would fly to a nearby air facility to provide the MEB its air component.

the Port of Al Jubayl.⁷ This port was located on the Persian Gulf, in the heart of the Saudi oil region, and only 210 kilometers south of Iraqi forces massing on the Saudi-Kuwait border. General Brabham immediately sent personnel and equipment to expand BSSG-7 to its wartime strength. The 1st FSSG administratively and medically screened every deploying Marine and sailor. It issued orders; gave shots; conducted training on the subjects of nuclear, biological, and chemical warfare, heat injury, and Arab customs; and ensured that all departing Marines fired their individual weapons before deployment.

The 1st FSSG sent departure airfield control groups and logistic movement control center teams to Norton Air Force Base, California, and Marine Corps Air Station El Toro, California, to assist 7th MEB's move to the Gulf.⁸ The logistics movement control center coordinated the arrival and departure of aircraft, ground transportation, and transient units. The departure airfield control group helped departing units unload ground transportation and load aircraft.

BSSG-7 began moving by air to the Gulf as part of the 7th MEB's 148-man Surveillance, Liaison, and Reconnaissance Party, tasked with preparing the Port of Al Jubayl for unloading MPSRon-2 ships. This team reached Saudi Arabia on 11 August.⁹ BSSG-7's advance party landed two days later and Colonel Powell arrived on the 16th. On 21 August, the main body reached Saudi Arabia, increasing the size of BSSG-7 to nearly 3,000 Marines and sailors in-country. In just 15 days, BSSG-7 grew in size from 35 Marines to 2,841 logisticians, moved to the other side of the globe, prepared for combat operations, and laid the ground-



Photo courtesy of LtGen James A. Brabham, Jr.

In August 1990, MPSRon-2 docked at Jubayl, 210 kilometers south of the Kuwaiti border, while the 7th MEB landed initially at Dhahran and later at Jubayl Naval Air Facility. Marine fixed-wing squadrons operated from the nearby island nation of Bahrain.

work for a larger logistical system.¹⁰

Thirty miles north of Camp Pendleton at Marine Corps Air Station El Toro, Marine Wing Support Group (MWSG) 37 provided direct logistics support as well as meteorological and crash and fire rescue services to the 3d Marine Aircraft Wing (3d MAW). MWSG-37, commanded by Colonel Robert W. Coop, deployed two squadrons to the Persian Gulf as part of the 7th MEB: Marine Wing Support Squadron (MWSS) 373, commanded by Lieutenant Colonel Stephen D. Hanson, located at El Toro, and MWSS-374, commanded by Lieutenant Colonel Stephen G. Hornberger, at the neighboring Marine Corps Air Station Tustin.¹¹

On 2 August, MWSS-373 was preparing to deploy to Turkey to participate in the exercise Display Determination in support of MAG-70. MWSS-373 rapidly added 20 personnel to the 7th MEB's Surveillance, Liaison, and Reconnaissance Party, which was swiftly followed by the squadron's advance party, which accounted for another 95 persons. The destination of MWSS-373 was Shaikh Isa Air Base on the Gulf island of Bahrain, and not Al Jubayl, Saudi Arabia. MWSG-37 sent additional people to flesh out MWSS-373, whose main body of 389 Marines and sailors departed California later that month.¹²

Earlier, on 10 August, MWSS-374, which had one detachment nearing completion of a 1,400,000-square-foot grading project at the expeditionary air field, Marine Air Ground Combat Center, Twentynine Palms, California, received orders from MWSG-37 to deploy to the Gulf in support of MAG-70. The group reassigned personnel to bring the squadron up to strength, and on 15 August the advance party departed. Twelve days later, all 21 officers and 426 enlisted

Marines and sailors of the squadron were in Saudi Arabia.¹³

As dictated by existing Marine and Navy contingency plans, MPSRon-2 immediately sailed from Diego Garcia Island to join the 7th MEB, already en route, in response to the crisis. The MV *Hauge*, MV *Bonnyman*, and MV *Anderson* reached the Port of Al Jubayl on 15 August.* Two of MPSRon-2's five ships were absent from Diego Garcia when the squadron steamed for Saudi Arabia. The MV *Fisher* was located off the west coast of Africa, enroute to Blount Island, Florida, to undergo scheduled maintenance. The MV *Fisher* turned around and sailed for the Persian Gulf, arriving at Al Jubayl on 24 August. The fifth ship of the squadron, the MV *Baugh*, was docked at Blount Island, Florida, undergoing scheduled maintenance. MV *Baugh* quickly departed the United States, docking at Jubayl on 5 September.¹⁴ In accordance with doctrine, Navy Captain Carl A. Weegar's NSE of 523 sailors arrived at the Port of Al Jubayl to assist BSSG-7 in unloading the MPS ships.^{15**}

BSSG-1

Rapidly responding to the emergency in the Gulf region, on 8 August, the four ships of MPSRon-3, located on Guam, also set sail for the Gulf to marry-up with units from the 1st Marine Expeditionary Brigade located at Marine Corps Air Station Kaneohe Bay, Hawaii.¹⁶ Brigade Service Support Group 1 (BSSG-1) provided general logistics support to the units of the 1st Brigade composed of the command element, Regimental Combat Team (RCT) 3, and Marine Aircraft Group 24, as well as the BSSG.

Lieutenant Colonel Ernest G. Beinhart III, a former enlisted Marine who served two tours in Vietnam, commanded BSSG-1. Unlike BSSG-7, BSSG-1 was a permanent organization consisting of 1,200 Marines and sailors and not a planning staff to be expanded, when required. The support group was dedicated to maritime prepositioning ship operations, completing Exercise Freedom Banner-90, just prior to Iraq's invasion of Kuwait. During this exercise, ships from MPSRon-3 were unloaded at Indian Head, Washington.¹⁷ On 26 August, BSSG-1's 51-member advance party reached the Port of Al Jubayl. On the same day, three ships from MPSRon-3, the MV *Lummas*, MV *Williams*, and MV *Lopez* dropped anchor at the Port, followed the next day by the arrival of Lieutenant Colonel Beinhart. Four days later, the last MPSRon-3 ship, the MV *Button* docked at Jubayl.¹⁸

On the east coast of the United States at Camp Lejeune, North Carolina, the 2d Force Service Support Group (2d FSSG) provided general logistics support to units of the II Marine Expeditionary Force which included the 2d Marine

*MPS ships are named after Marine Corps recipients of the Medal of Honor.

**Capt Weegar formed the NSE around the Naval Beach Group which he commanded at the Naval Amphibious Base Coronado, California, and sailors from the Navy Cargo Handling and Port Group, Williamsburg, Virginia. (Powell comments)

Table: MPSRon-2 and 3 ships and arrival dates at port of Al Jubayl.¹⁹

MPSRon-2 Ships (Diego Garcia)	Date Arrived Jubayl	MPSRon-3 Ships (Guam)	Date Arrived Jubayl
MV <i>Anderson</i>	15 August	MV <i>Williams</i>	26 August
MV <i>Bonnyman</i>	15 August	MV <i>Lummus</i>	26 August
MV <i>Haque</i>	15 August	MV <i>Lopez</i>	26 August
MV <i>Fisher</i>	15 August	MV <i>Button</i>	30 August
MV <i>Baugh</i>	5 September		

Division and 2d Marine Aircraft Wing. Brigadier General Charles C. Krulak, a Naval Academy graduate who had completed two tours in Vietnam and also had served as the deputy director of the White House military office, commanded the 2d FSSG.²⁰

Brigade Service Support Group (BSSG) 4, 2d FSSG, commanded by Colonel James J. Doyle, Jr., was also located at Camp Lejeune. BSSG-4 provided general logistics support to the units of the 4th Marine Expeditionary Brigade (4th MEB) consisting of the brigade command element, Regimental Landing Team 2, and Marine Aircraft Group 40.* The brigade support group actually consisted of a small planning staff that the 2d FSSG augmented with people and equipment for exercises and operations. It supported a Marine expeditionary brigade that deployed to a crisis on board U.S. Navy amphibious shipping rather than by air.

The 4th MEB staff demonstrated its flexibility during the first week of August 1990. In a period of eight days, the 4th MEB shifted its efforts from planning two exercises in Europe to a contingency operation off Liberia and, finally to its rapid deployment by ship to the Persian Gulf. On 10 August, the Commander-in-Chief, Atlantic Fleet, ordered the MEB to the Persian Gulf. The next day, the 2d FSSG transferred operational control of BSSG-4 to the 4th MEB.

Between 17 and 22 August, the 1,464 Marines and sailors of BSSG-4 quickly departed from Moorehead City, North Carolina, on 13 ships, divided into three transit groups belonging to Amphibious Group 2. Towards the end of August, embarkation teams from the 2d Force Service Support Group, II Marine Expeditionary Force, and Fleet Marine Force, Atlantic, moved to Sunny Point, South Carolina, to load five Military Sealift Command chartered ships with 30 days of supplies and equipment for the 4th MEB.^{21**}

*Regimental Landing Team 2 consisted of two infantry battalions, an artillery battalion, and detachments of light armored vehicles, TOWs, engineers, and amphibious assault vehicles.

**Col Skipper, the commanding officer of the 8th Engineer Support Battalion, 2d FSSG, called the 4th MEB's embarkation on board amphibious ships "a mess, poorly coordinated, it became a stuffex." The 4th MEB loaded much of its equipment on the MSC char-

Table : 4th Marine Expeditionary Brigade shipping²²

Transit Group 1	Transit Group 2	Transit Group 3	Assault Follow-on MSC Shipping
USS <i>Gunston Hall</i> (LSD-44)	USS <i>Nassau</i> (LHA-4)	USS <i>Guam</i> (LPH-9)	MV <i>Cape Domingo</i>
USS <i>Shreveport</i> (LPD-12)	USS <i>Raleigh</i> (LPD-1)	USS <i>Iwo Jima</i> (LPH-2)	MV <i>Strong Texan</i>
USS <i>Spartanburg County</i> (LST-1192)	USS <i>Pensacola</i> (LSD-38)	USS <i>Manitowoc</i> (LST-1180)	MV <i>Bassro Polar</i>
USS <i>Portland</i> (LSD-37)	USS <i>Saginaw</i> (LST-1188)	USS <i>Lamoure City</i> (LST-1194)	MV <i>Aurora T</i>
USS <i>Trenton</i> (LPD-14)			MV <i>Pheasant</i>

On patrol near the Philippine Islands in August, having departed California for its Western Pacific deployment only a few months before, the 13th Marine Expeditionary Unit (Special Operations Capable) (MEU[SOC]), transported by the five ships of Amphibious Ready Group "A," set a course for the Middle East.*** MEU Service Support Group 13 (MSSG-13), the smallest of the standard Marine air-ground task force combat service support organizations, provided logistic support to the MEU's command element, Battalion Landing Team (BLT) 1/4, and Marine Medium Helicopter Squadron (HMM) 164 (Composite). Lieutenant Colonel Bradley M. Lott commanded MSSG-13's 16 officers and 273 enlisted Marines and sailors arrayed into eight detachments replicating, in miniature, the eight battalions of the FSSG.²³

As a result of the traditional warm relationship between the Marines and

tered ships because of the shortage in amphibious shipping. Col Skipper added, "as a result, my 450-man engineer detachment ended up with only two 5-ton trucks with ROWPUs on board amphibious shipping. All the rest of the equipment was on the MSC ships." (Col Charles O. Skipper, comments on draft, Feb97, Author's file, MCHC, hereafter Skipper comments. For a comprehensive narrative on 4th MEB's embarkation, see LtCol Ronald J. Brown, USMCR (Ret), *U.S. Marines in the Persian Gulf, 1990-1991: With Marine Forces Afloat in Desert Shield and Desert Storm* (Washington, D.C.: Hist&MusDiv, 1998).

***The USS *Okinawa* (LPH-3), USS *Ogden* (LPD-5), USS *Fort McHenry* (LSD-43), USS *Durham* (LKA-114), and USS *Cayuga* (LST-1186) were the ships of Amphibious Squadron 5.

the Navy's mobile construction battalions, better known as "Seabees," forged during the bloody island-hopping campaigns of World War II,²⁴ the Commander, Naval Construction Battalions Pacific Fleet (COMCBPAC), located in Pearl Harbor, Hawaii, ordered in August four naval mobile construction battalions spread over half of the world to join the Marines in the Persian Gulf.^{25*} The U.S. Navy maintained eight active-duty naval mobile construction battalions that augmented Marines when construction requirements exceeded the capabilities of Marine engineer units. The Seabees performed similar construction tasks to the FSSG and MWSG engineers.²⁶

Since there was no active regimental headquarters, a composite headquarters, dubbed COMCBPAC Foxtrot Delta (forward deployed), was formed from the staffs of COMCBPAC, the Commander Naval Construction Battalions Atlantic Fleet, and the 31st Construction Regiment (Training). Commander Michael R. Johnson, USN, a member of the Civil Engineer Corps, was quickly frocked to the rank of Captain in deference to his new responsibilities as the commanding officer of the regiment.**

As ordered by COMCBPAC, Naval Mobile Construction Battalion 40 (NMCB-40), stationed in Guam; NMCB-7 posted to Okinawa, NMCB-4 located at Roosevelt Roads, Puerto Rico; and NMCB-5, based at Port Hueneme, California, prepared to deploy in three echelons to the Gulf. Organized into light air detachments and heavier air echelons, the Seabee units air movements were due to arrive in the region before 22 August, with the bulk of each battalion's organizational equipment to follow by ship reaching Saudi Arabia a month later. Unfortunately, the lack of aircraft delayed the Seabee air deployment, forcing most of the equipment scheduled to be shipped by air to be moved by ship. The Seabees slightly enlarged their light air movement detachments to compensate for the loss of the heavier air echelon.

Needing to synchronize Seabee and Marine Corps efforts, on 10 August, Captain Johnson sent Lieutenant Kevin R. Slates, USN, as his liaison officer, and Commander William L. Rudich, the regimental operations officer, to Camp Pendleton. Both Navy officers then travelled to Saudi Arabia with Lieutenant Colonel Marshall B. Foore, the I MEF Engineer Officer.²⁷ This Navy-Marine Corps engineer team formulated a plan for the Seabees to reinforce the MWSS-374 engineers at Jubayl Naval Air Facility and King Abdul Aziz Naval Air Station and to assist the BSSG-7 engineers at the Port of Jubayl.*** Another

*The Seabees of the Naval Mobile Construction Battalions differ in training and mission from the Seabees of the Amphibious Construction Battalions that were assigned to Capt Weegar's NSE. (Author telephone intvw, 21Feb97, with MChief Alfred H. Jensen).

**Frocking allows those selected for the next higher grade to wear their new rank, without the benefits of increased pay and legal authority, prior to their official promotion date. Naval officers who command naval mobile construction organizations are members of the Civil Engineer Corps (CEC).

***Comdr Rudich, LtCol Foore, and Lt Slates played a critical role in the early planning and engineer execution, setting the stage for all follow-on engineer operations, according to Capt Johnson. (Johnson comments).

Seabee group, consisting of the supply officer, Lieutenant Commander Jon Miller, USN; Marine liaison officer Major Martin R. Nolan, USMC; and the operations chief, Master Chief Utilitiesman John Henderson, soon joined the first group.²⁸ This team began arranging logistics support and evaluating the threat and security situation.

On 28 August, 10 members of the command element of COMCBPAC Foxtrot Delta together with the advance party of NMCB-5 reached Saudi Arabia. Two days later, the remaining members of the COMCBPAC Foxtrot Delta command element landed, followed on the 31st by the last increment of NMCB-5's air detachment. Lieutenant Daniel T. Ray, USN, commanded the detachment consisting of 91 sailors and 23 pieces of equipment. This group began construction operations with the Marines of MWSS-374 at Jubayl Naval Air Facility. The first 31 members of NMCB-4's air detachment arrived from Puerto Rico on the last day of August, raising the number of deployed Seabees to 181.²⁹ NMCB-4 was assigned to King Abdul Aziz Naval Air Station four days after its arrival. On 2 September, the MV *Constellation* departed Guam carrying NMCB-40's organizational equipment.³⁰

The senior Marine logistician in Saudi Arabia by this time was Brigadier General Brabham, who had arrived earlier in the month. Lieutenant General Boomer, the I MEF commander, had assigned Brabham as his personal representative and ordered him to Riyadh, the capital city of Saudi Arabia. Rather than commanding the 1st FSSG, Brabham's first task was to establish the MarCent headquarters in Saudi Arabia. His recent tour at USCentCom, the overwhelmingly logistical nature of the deployment, and the long-term benefits of positioning I MEF's ranking logistic officer in Saudi Arabia at the earliest opportunity made Brabham the obvious person to fill this position and at a later date to reassume control of the 1st FSSG.³¹

Following General Brabham to Saudi Arabia were four members of the Logistics Movement Control Center (Forward), 1st FSSG. This group coordinated the arrival of aircraft with locally available transportation and reported aircraft arrivals to 1st FSSG at Camp Pendleton.³² On 29 August, the Advanced Party of 1st FSSG left Southern California. Their purpose was to establish a forward headquarters and to plan the amalgamation of BSSG-7 and BSSG-1 into the 1st FSSG. By 2 September, 83 personnel belonging to the 1st FSSG were in Saudi Arabia, ready to take control of both BSSGs.³³

The Navy and the Air Force performed superbly in transporting Marines and Seabees to the Gulf. During the one month following the invasion of Kuwait, eight maritime prepositioning ships reached the Port of Jubayl with a ninth ship closing rapidly. Eighteen U.S. Navy amphibious ships carried the 4th MEB and 13th MEU (SOC) towards the Persian Gulf. Five chartered ships were being loaded to move 4th MEB's supplies and one ship transported Seabee equipment. Two hundred and fifty-nine Military Airlift Command flights moved the 16,469 passengers and 5,985 short tons of cargo belonging to the 7th MEB. Twenty-four flights moved the lead elements of the 1st Marine Brigade and 30 flights transported Seabees. Of the 20,524 Marines and sailors ashore in Saudi Arabia, 4,783

were the logisticians belonging to BSSG-7, BSSG-1, MWSS-373, MWSS-374, the Seabees, and 1st FSSG (Forward). Of the 13,515 personnel afloat with the 4th MEB and 13th MEU (SOC), 1,737 were the logisticians of BSSG-4 and MSSG-13.³⁴ After arriving in the middle east, the 7th MEB took advantage of the excellent facilities provided by the governments of Saudi Arabia and Bahrain, unloaded the MPS ships, and spread out in defense of Al Jubayl.

Table: Logistics units deployed to the Persian Gulf in September 1990³⁵

I MEF Logistics Units	Number of Personnel	Logistics Units Afloat	Number of Personnel
BSSG-7	2,857	BSSG-4	1,464
BSSG-1	711	MSSG-13	272
MWSS-373	504		
MWSS-374	447		
Seabees	181		
1st FSSG (Forward)	83		

Drawing the Mameluke

We got three of them at once and did a "dump-ex" on them. We offloaded three ships in about three or four days.³⁶

The 7th MEB entered the oil-rich Persian Gulf area through the heart of its most developed infrastructure. This region contained major airfields and sea-ports interconnected by an extensive road network optimal for joining Marines, who arrived by air, with their surface-transported equipment. These facilities allowed 7th MEB to build an air-ground defense faster than envisioned by strategic planners.

Al Jubayl was the major port used by Marines during Desert Shield and Desert Storm. This port had 16 berths for unloading ships, heavy lift equipment, abundant warehousing, extensive outdoor hardstand, storage, and staging areas; a good surrounding road network; and an existing work force. The port was located near vacant labor camps and the Hulwaylatt Hospital used for the construction of the Industrial City of Jubayl.* The cantonment area at the port was named Camp Shepherd in honor of General Lemuel C. Shepherd Jr., the 20th Commandant of the Marine Corps.³⁷

Located 27 kilometers due west of the port was Jubayl Naval Air Facility, which gave 7th MEB a local airfield to fly in people and equipment and a heli-

*The Industrial City contained the Saudi petrochemical industry in the Eastern Provinces.



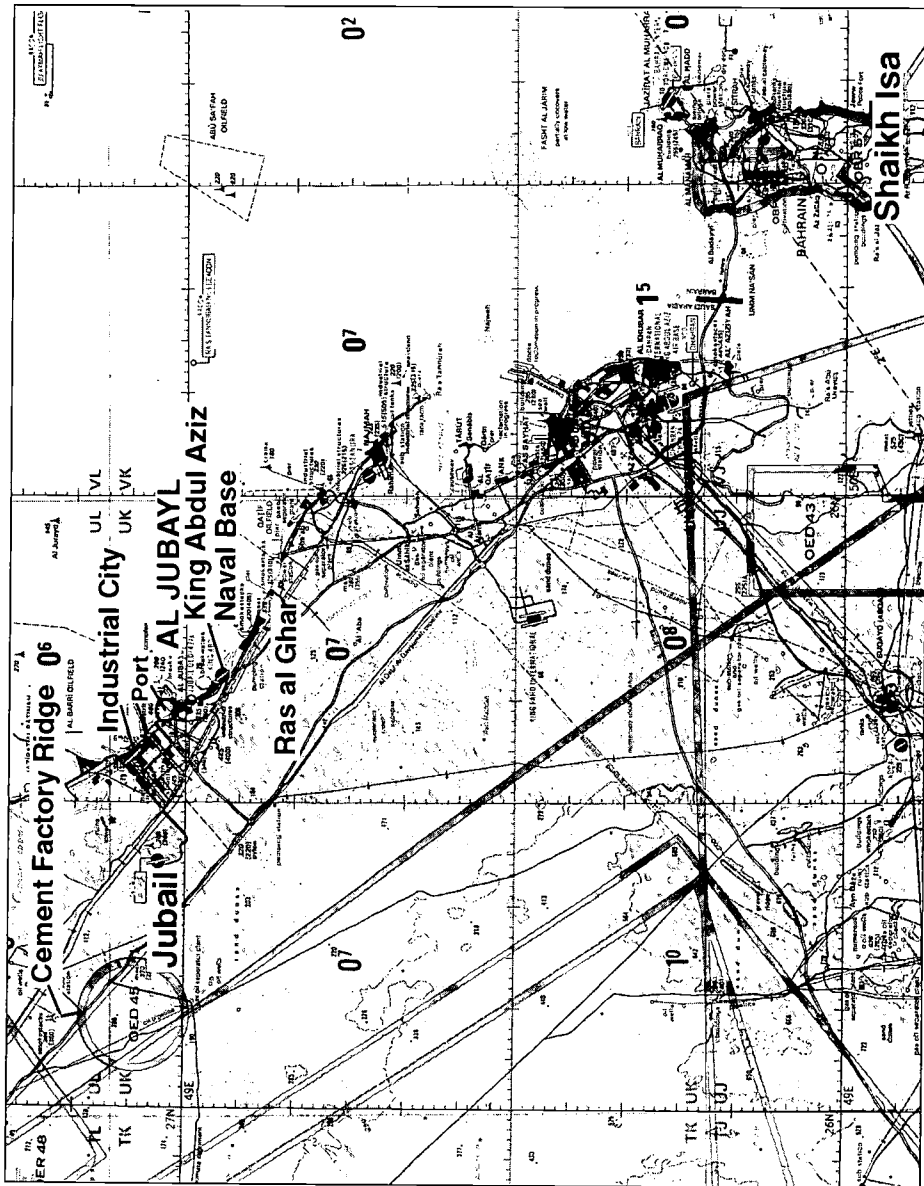
Photo courtesy of LtGen James A. Brabham, Jr.

The Port of Jubayl was an expansive modern facility that could unload 16 ships simultaneously.

copter base to support defensive operations. On 16 August, the Military Airlift Command, responding to 7th MEB's request to open an airhead closer to the Port of Jubayl than Dhahran, began flying missions to Jubayl Naval Air Facility.³⁸ The next day, Bell Textron Super Cobra attack helicopters from Marine Light Attack Helicopter Squadron (HMLA) 369 arrived at the air facility. Seven more helicopter squadrons joined them over the next 16 days.*

Already, on 15 August 1990, the 7th MEB's Surveillance, Liaison and Reconnaissance Party had arrived at the Port of Jubayl to unload the ships of MPSRon-2. Expecting a gunfight upon arrival, the locked-and-loaded Marines of the Surveillance, Reconnaissance, and Liaison Party brushed past the business-as-usual-attitude prevailing in Saudi Arabia, and rushed to unload the MV *Bonnyman*, MV *Hauge*, and MV *Anderson*.³⁹ Major items of equipment such as M60 tanks, light amphibious vehicles, amphibious assault vehicles, M198 howitzers, trucks, forklifts, and container handlers came off the ships first. By 17 August, all 1,156 major items of equipment were unloaded and by the 21st, 29,257 short tons of cargo and containers were on dry land.⁴⁰ Anxious to move to the field and establish the defense of Jubayl, 7th MEB units rushed to claim their equipment. This caused a distribution problem when some ground units grabbed more equipment than they rated, leaving others without. This gave the 1st Marine Division Logistics Officer, Colonel Jasper C. Lilly, a long-term headache

*7th MEB helicopters were transported by cargo air planes to Saudi Arabia and not by sea.



Facilities Infrastructure in Saudi Arabia and Bahrain

in sorting out ownership.* Despite this annoyance, the rapid unload of MPSRon-2 allowed the 7th MEB to announce its readiness to defend Jubayl on 25 August, a little more than three weeks after the start of hostilities and nearly a week before strategic planners believed Jubayl could be defended.^{41**}

On 22 August, the MV *Bonnyman* was reloaded with ammunition and ground equipment to build up the 7th MEB's aviation capability in Bahrain. Located on a small Persian Gulf island, Bahrain was physically connected to Saudi Arabia by 27 kilometers of causeway and diplomatically by membership in the Gulf Cooperative Council.^{***} The island is 50 kilometers long and 18 kilometers wide. Shaikh Isa Air Base, on the island, is located in the sparsely populated southern part of Bahrain. The command elements of MAG-70 and its fixed wing squadrons set up shop at this airport. Shaikh Isa was located 150 kilometers southeast of the port of Al Jubayl, which was a two-hour journey by ground transportation. Located in the densely populated north of the island, Bahrain International Airport served as the bed-down site for six Lockheed KC-130 Hercules refuellers belonging to Marine Aerial Refueller Transport Squadron (VMGR) 352. MAG-70 used the nearby port of Mina Suliman to unload military prepositioning ships after their initial stop at Jubayl.⁴²

Back in Saudi Arabia, the 7th MEB continued to unload MPSRon-2 ships and use them to support the aviation build-up. On 24 August, MV *Hauge* moved 10 kilometers southeast of the Port of Jubayl, to pump aviation fuel at King Abdul Aziz Naval Air Station. On the same day, 20 McDonald Douglas AV-8B Harrier jets of Marine Attack Squadron (VMA) 311 arrived at this facility, while the MV *Fisher*, the fourth ship of MPSRon-2, docked at the Port.⁴³ All 10,000 short tons of cargo from the *Fisher* were unloaded by 27 August, and similar to the MV *Bonnyman*, the *Fisher* was reloaded with aviation ammunition and ground support equipment bound for Bahrain.⁴⁴

On 26 August three ships from MPSRon-3, the MV *Lummas*, MV *Williams*, and MV *Lopez* docked at the Port of Jubayl. Meeting the ships were the Marines of BSSG-1 who arrived with the 1st Marine Expeditionary Brigade's advance party. Four days later, the last ship belonging to MPSRon3, the MV *Button*, reached the Port. BSSG-1 spent its brief nine-day existence in Saudi

*In addition, 7th MEB unevenly distributed fortification materials (sandbags, barbed wire, and engineer stakes). According to Col Powell, "It (fortification material) pretty much went out on a first come first serve basis because there was no distribution plan and no system to relate bundles of sandbags and rolls of wire with units and areas to be defended. Consequently, units at Jubayl were protected with sandbagged positions while some division units moved to the desert without any fortification materials." (Powell comments).

**7th MEB's efforts to establish a defense quickly were frustrated by a shortage of USAF aerial refuellers which postponed the arrival of MAG-70 fixed-wing aircraft and by a delay in obtaining Saudi permission to move RCT-7 out of the Port of Jubayl.

***The Gulf Cooperative Council was a defense pact established in 1981 by Saudi Arabia, Bahrain, Kuwait, Qatar, Oman, and the United Arab Emirates to counter both Iranian and Iraqi aggression in the Persian Gulf.



Photo courtesy of LtGen James A. Brabham, Jr.

The Jubayl Naval Air Facility, located 27 miles west of the Port of Jubayl, after 16 August 1990, became the Marines' main airhead for passengers and cargo entering Saudi Arabia and the primary Marine Corps helicopter facility.

Arabia unloading ships. With the 7th MEB consolidating defensive positions, BSSG-1 Marines had time to stage, organize, and account for equipment and materiel. The use of bar-coding scanning procedures greatly assisted identifying and sorting the masses of look-alike containers. By 2 September, all major equipment was unloaded from the MV *Lummus*, MV *Williams*, and MV *Lopez* and nearly all of the containers and cargo. BSSG-1 offloaded 83 percent of *Button's* equipment, a fifth of its containers, and 47 short tons of cargo. In total, BSSG-1 took off the ships 41,961 short tons of cargo in seven days and began the sorting, organizing, and issuing process.⁴⁵

The 7th MEB laid claim to superior facilities in Saudi Arabia and Bahrain. Both countries provided modern seaports and airports within reach of the anticipated field of battle. These facilities served as the foundation for the 7th MEB's defense of Jubayl. I MEF would soon use the same facilities to extend its combat capabilities in the Gulf.

Tools of the Trade

The Logistics Vehicle System (LVS) especially proved a life saver.⁴⁶
—Col Alexander W. Powell, CO, BSSG-7

While the Marines of BSSG-1 unloaded MPSRon-3, the BSSG-7 and MWSS Marines recovered their materials, handling bulk fuel storage, water pro-



Photo courtesy of LtGen James A. Brabham, Jr.

Two MPS ships laden with Marine supplies dock at the Port of Jubayl in August 1990.

duction, construction, and motor transportation equipment. The Logistical Vehicle System (LVS) was the premier method of tactical ground transportation belonging to the Marine Corps. LVSSs, also known as “Dragon Wagons,” provided logisticians a flexible system for moving cargo, containers, people, water, fuel, and recovered vehicles. The LVS family consisted of the MK48 12.5-ton power unit and four different types of trailers. The MK14 container hauler was a trailer used to move standard 8 by 8 by 20-foot containers, 900-gallon water and fuel modules called Sixcons, and fuel/water pumps. Special trailers carrying heavy equipment, such as tanks and bulldozers, were connected to the M48 power unit by the MK16 fifth-wheel semi-trailer configuration. The MK17 cargo hauler was modified and used to haul troops and evacuate wounded from the battlefield as well as to move cargo. The MK15 wrecker trailer gave the LVS a vehicle recovery capability.^{47*}

In addition to the LVS, 5-ton trucks were used to carry cargo and people, while the M931 5-ton tractor was hitched to the M970 5,000-gallon tanker to transport fuel. Ancient, but operational, 1,000-gallon M49 fuel and M50 water trucks were also used to transport bulk liquids.

BSSG-7's Motor Transport Detachment deployed 65 MK48 power units, 46 MK14 container haulers, 17 MK17 cargo trailers, and 3 MK16 fifth-wheel semi-trailer adapters. Augmenting the Dragon Wagon fleet were 26 5-ton trucks and 12 M970 5,000-gallon tankers. MWSS-374 operated 10 Dragon Wagons, 18 5-ton trucks, and 8 M970 5,000-gallon fuel tankers. MWSS-373

*A fifth trailer, the MK18, transported ribbon bridges and was fielded after Desert Storm. (Woodson comments).

deployed 10 Dragon Wagons, 26 5-ton trucks, and 9 M970 5,000-gallon fuel tankers. All three units had a small number of M49A2 refuelers and M50A2 water trucks.⁴⁸

Material-handling equipment, such as container handlers, cranes, and forklifts, was essential in picking, placing, and moving the numerous containers, pallets, and vans in which supplies and equipment were packed. The rough terrain container hauler (RTCH) was the largest piece of material-handling equipment deployed to the Gulf. It weighed 103,000 pounds and looked like a giant forklift. It could lift and move fully loaded 8-by-8 by 20-foot containers weighing up to 25 tons. Heavy- and medium- capacity cranes along with medium- and light-forklifts, such as the compact RT 4000 forklift, handy in the tight areas around ammunition bunkers and 5-ton trucks, gave the logisticians of the 7th MEB a variety of equipment to use for a multitude of tasks.⁴⁹ MPSRon-2 carried 10 container handlers, 16 cranes, and 28 forklifts for BSSG-7; 1 container handler, 8 cranes, and 26 forklifts for MWSS-373; and 1 container handler, 8 cranes, and 25 forklifts for MWSS-374.⁵⁰

Bulk fuel was either stored in amphibious assault fuel systems operated by the BSSG\FSSGs or by tactical airfield fuel dispensing and helicopter expedient refuelling systems belonging to the MWSSs. An amphibious assault fuel system consisted of an interconnected array of pumps, hoses, and 20,000-gallon fuel tanks capable of storing up to 600,000 gallons. BSSG-7 rated eight amphibious assault fuel systems. The tactical airfield fuel dispensing systems stored 120,000 gallons in six 20,000-gallon tanks and dispensed fuel to aircraft from six refuelling points. MWSS-373 possessed eight tactical airfield fuel dispensing systems

Marines from BSSG-1 prepare to unload ships from MPSRon-3. The ship MV PFC Dwayne T. Williams is seen in the foreground.

Photo courtesy of LtGen James A. Brabham, Jr.

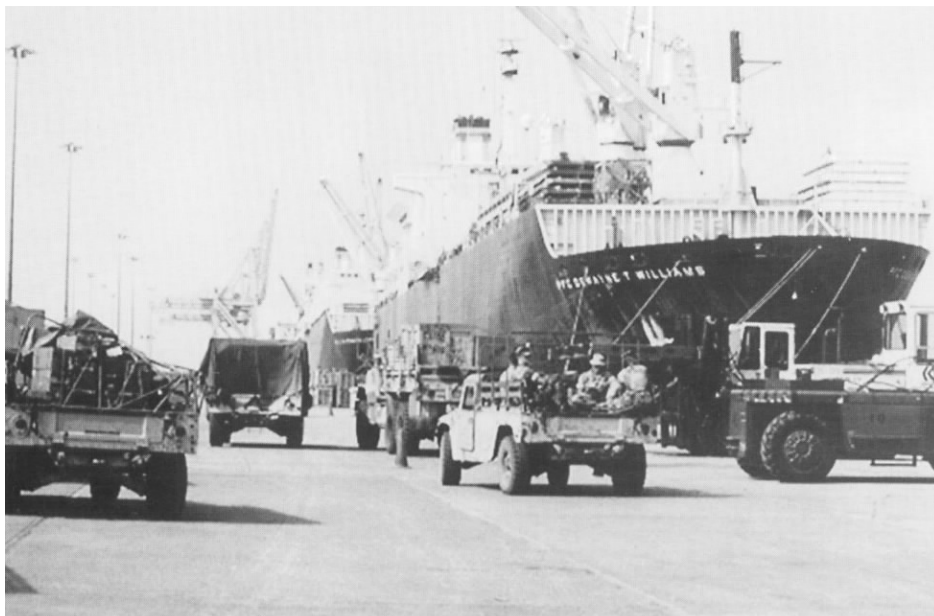




Photo courtesy of Col Thomas S. Woodson

A LVS MK48 12.5-ton power unit pulling an empty MK17 container hauler trailer.

and MWSS-374 owned seven. The helicopter expedient refueling system stored 9,000 gallons of fuel in an array of 18 500-gallon collapsible fuel drums interconnected by hoses to filter separators and pumps. This system was air transportable and designed to dispense fuel at forward locations. MWSS-373 owned five helicopter expedient refueling systems and MWSS-374 maintained eight.⁵¹

The 7th MEB water production capability was provided by reverse osmosis water purification units (ROWPUs). A ROWPU produced up to 600 gallons per hour of purified water from raw water sources such as sea water. In addition, ROWPUs could remove chemical, mineral, and biological contaminants from water. ROWPUs, combined with pumps, tanks, and bladders, were used to establish water points. BSSG-7 owned 13 ROWPUs, MWSS-373 had 8, and MWSS-374 possessed 7.⁵²

Both BSSG and MWSS engineers used heavy equipment, such as bulldozers and graders, to improve and build roads, construct berms surrounding fuel storage and ammunition cells, and stabilize the ground for aircraft parking areas. For the latter purpose, aluminum sheets of AM2 matting were fixed to the ground giving aircraft a place to park and helicopters an area on which to land and from which to take off. BSSG-7's earth-moving capability was centered around 16 bulldozers and three road graders, while MWSS-373 had five bulldozers and a road grader and MWSS-374 operated five bulldozers and two road graders.⁵³

BSSG-7, MWSS-373, and MWSS-374 claimed their equipment at the Port of Jubayl and began to support 7th MEB's ground and aviation combat units. MWSS-373 set up shop at Shaikh Isa Air Base to support fixed-wing operations, while MWSS-374, moved to King Abdul Aziz Naval Air Station to support the Harrier squadron and to Jubayl Naval Air Facility to sustain helicopter operations. BSSG-7 established itself at the Port of Al Jubayl and began building a general logistical support system.

Creating the General Logistics Support System

*It was just a matter of shifting gears from a peacetime exercise to a deployment for an actual contingency.*⁵⁴ —Col Alexander W. Powell, CO, BSSG-7

On 18 August 1990, the 7th MEB ordered BSSG-7 to unload MPSRon-2, support the relocation of ground and aviation combat elements, establish remote logistics sites, and sustain units in the field.⁵⁵ A week later, the MEB assigned BSSG-7 the responsibility for security at the Port of Al Jubayl and the nearby Huwaylath Hospital.⁵⁶ Organized on functional lines, BSSG-7 along with help from its Arab hosts, sister Services, and Camp Pendleton, began sustaining the 7th MEB.

Captain Adrian W. Burke, Landing Support Detachment commander, BSSG-7, was responsible for unloading the ships of MPSRon-2. Captain Burke had arrived at Dhahran Air Base, Saudi Arabia, on 11 August, with the Survey, Liaison, and Reconnaissance Party.⁵⁷ He immediately ordered First Lieutenant Kenneth Olivo to establish a 12-man arrival air control group at Dhahran, responsible for unloading arriving aircraft and facilitating forward movements of people and equipment. Arriving at the Port of Jubayl, the landing support detachment together with the sailors from Captain Weegar's NSE rapidly offloaded the ships of MPSRon-2.* On 16 August, Captain Burke established a second arrival air control group, led by First Lieutenant Kevin M. McNerney, at Jubayl Naval Air Facility.⁵⁸

Major David L. Jankowski commanded the six officers and 234 enlisted Marines of BSSG-7's motor transport detachment. From 19 August-2 September, the motor transport detachment moved 600 tons of aviation and ground ammunition from the Port of Jubayl to forward deployed units. Major Jankowski used Dragon Wagons hauling 900-gallon Sixcons and M50 1,000-gallon tankers to move water to forward units. Even with the motor transport detachment's efforts, 7th MEB's transportation demands exceeded supply. From the beginning of the deployment, the Marines used host nation trucks and creative substitutions for ground transportation. The Saudi government provided 45 8,000-gallon tankers to move fuel to King Abdul Aziz Naval Air Station and Jubayl Naval Air Facility. In anticipation of moving units north by water, the Marines borrowed five utility landing craft (LCUs) from the Saudi Navy and the U.S. Army.⁵⁹

Major John L. Sweeney, Jr., commanded the engineer detachment of 20 officers and 700 enlisted Marines and sailors. This detachment furnished 7th MEB with bulk fuel storage, construction, and water production and storage capabilities.⁶⁰ The 26 Marines of the engineer detachment's water supply platoon produced water with ROWPUs. On 17 August, the water supply platoon established

*According to Col Powell, "the NSE, especially the Navy Cargo Handling and Port Group, played a critical role . . . in unloading MPSRon-2." (Powell comments).



Photo courtesy of CWO5 Thomas M. Sturtevant

A giant Rough Terrain Cargo Handler (RTCH) lifts an 8 x 20-foot container onto a trailer.

a water point at the Port of Jubayl. Four ROWPUs produced water stored in three 50,000- and two 20,000-gallon tanks. A second water point, using one ROWPU with 50,000 gallons of storage, was established at the Royal Saudi Naval base at Ras Al Ghar, located 25 kilometers southeast of the Port of Jubayl.* The water point was established to support RCT-3 from Hawaii.⁶¹ The cantonment area for RCT-3 was named Camp Dan Daly after the legendary Marine recipient of two Medals of Honor.⁶²

During the first weeks of the deployment, the 7th MEB drank water either produced by BSSG-7 or bottled water procured by contracting officers. Water from the local municipal system was used for showers. On 29 August, the Medical Detachment, BSSG-7 began evaluating the potability of municipal water. Two days later, this team reported that the Saudi water supplies at the port, Jubayl Naval Air Facility, Camp 15 in the Industrial City, and King Abdul Aziz Naval Air Station were safe for drinking. The next day the team reported that water produced by the desalinization plant north of Jubayl was potable. The 7th MEB began to use the local water for consumption and considered ending the purchase of bottled water.⁶³

The engineer detachment's bulk fuel personnel could operate up to eight 600,000-gallon assault amphibious fuel systems. On 16 August, BSSG-7 began dispensing some of the 77,183 gallons of fuel offloaded from MPSRon-2 at the Port of Al Jubayl. On 24 August, bulk fuel Marines from the engineer detachment, located at King Abdul Aziz Naval Air Facility, received aviation fuel during a ship-to-shore transfer through 18,000 feet of hose from the MV *Hauge*. In a three-day period, amphibious Seabees from the NSE pumped 504,000 gallons of fuel

*The Navy base at Ras Al Ghar should not be confused with the point of land having the same name north of Al Jubayl.

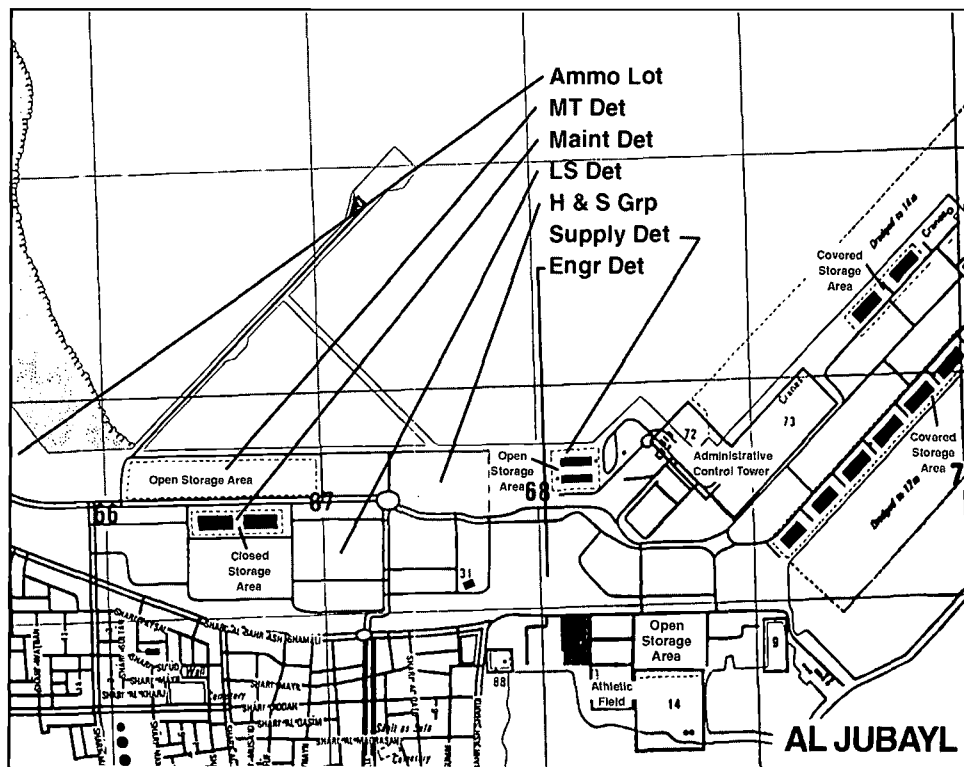


Diagram from 1st FSSG ComdC Nov 90

This diagram map of the Port of Jubayl locates the GSG-1 functional detachments which evolved from BSSG-7.

from the *Hauge* into one of BSSG-7's amphibious assault fuel systems.^{64*} While the 7th MEB planned to build an amphibious assault fuel system at Jubayl Naval Air Facility, construction did not start until after 2 September. Helicopters at this facility as well as fixed-wing aircraft at Abdul Aziz Naval Air Station and Shaikh Isa Air Base, received fuel contracted from and transported by the host nations.⁶⁵

Engineer detachment construction personnel concentrated on building berms around the assault amphibious fuel systems at King Abdul Aziz Naval Air Station, Shaikh Isa, and the aviation ammunition storage point at Jubayl Naval Air Facility while working on a variety of other projects. In case of an Iraqi assault, MAG-70 needed to store and protect sufficient fuel and ammunition to support three days of maximum flight operations by all of its aircraft. Elsewhere, BSSG-7 engineers assembled heads and shower facilities at Ras Al Ghar Navy Base for

*Col Powell attributed the success of the ship-to-shore fuel transfer at King Abdul Aziz Naval Air Station to "lessons learned" when BSSG-7 and the NSE had "failed miserably" the previous year to pipe fuel from ship-to-shore during Exercise Talay Thai in Thailand. (Powell comments).

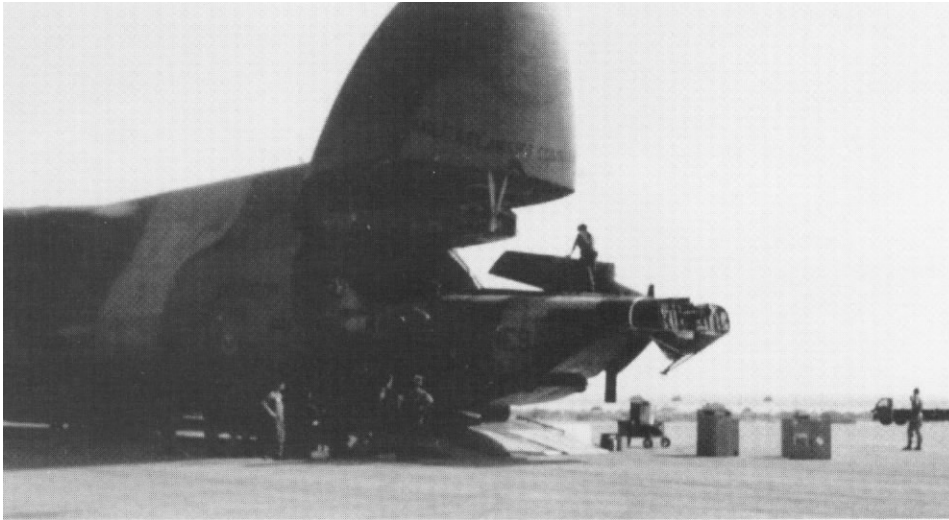


Photo courtesy of Maj Adrian W. Burke

At Jubayl Naval Air Facility, Marines of BSSG-7's Arrival Airfield Control Group help unload a CH-53 Sea Stallion helicopter from a giant USAF C5 transport.

RCT-3. The Saudis added to this camp by erecting 500 tents complete with carpeted floors. BSSG-7 engineers began fabricating wooden tent frames, called "strong backs," and laid concrete foundations to support the long-term use of tents at the Port of Jubayl.^{66*}

Major William C. Cox led the 561 Marines of the BSSG-7 maintenance detachment which was organized into engineer, communications-electronics, motor transport, ordnance, and general support maintenance companies. Major Cox focused the engineer maintenance company's efforts on maintaining equipment needed to unload the MPF ships, such as generators and material handling equipment. As equipment came off the ships, the motor transport maintenance company was inundated with trucks requiring repair, while the ordnance maintenance company performed limited technical inspections on M198 155mm howitzers, crew-served weapons, antitank weapons, and optical equipment prior to the 7th Marines deploying to the field.⁶⁷

Navy Lieutenant Commander Alan L. Nelson commanded the Medical Detachment, BSSG-7 of 52 Navy officers and 338 enlisted sailors and Marines. The medical detachment provided 7th MEB with force-level or second-echelon medical treatment. Second-echelon medicine consisted of resuscitative treatment, surgery, and blood transfusions designed to either cure or stabilize injured, wounded, and sick Marines and sailors. The medical detachment evacuated more serious cases after stabilization to third-echelon theater-level medical organiza-

*Concrete was used for tent foundations instead of wood, because of availability and cost. (Skipper comments). Because the Saudis refused to allow the Marines to drive tent stakes into the asphalt at the Port of Jubayl, the engineers constructed thousands of concrete blocks with metal loops sticking out the top to secure their tents. (Col Paul A. Pankey, comments on draft, 26 Feb 97, Author's files, MCHC, hereafter Pankey comments).



Photo courtesy of LtGen James A. Brabham, Jr.

The Marines took over this fully equipped, abandoned hospital at Al-Huwaylatt in the Jubayl Industrial City and renamed it the Marine Corps Hospital at Al-Huwaylatt. It became operational on 27 August 1990.

tions like naval fleet hospitals or hospital ships. First-echelon or unit-level medical treatment was administered by unit corpsmen and aid stations. First echelon treatment consisted of first aid, physician primary care, and fluid therapy.⁶⁸

Initially, 7th MEB used the Saudi naval hospital at King Abdul Aziz Naval Base for treatment. On average, eight patients were treated per day. On 26 August, the 7th MEB discovered the fully equipped but abandoned Saudi hospital at Al-Huwaylatt located in the Jubayl Industrial City. This hospital, previously used to care for foreign workers and the local population, was abandoned in 1988. The Al Huwaylatt Hospital could simultaneously perform surgery on 10 patients. The 7th MEB renamed this facility the Marine Corps Hospital at Al-Huwaylatt. BSSG-7 doctors performed two operations on the 27th. Additionally, the top floor of the Marine Corps hospital was used as a women Marines' barracks.⁶⁹

On 21 August, the USNS *Noble Star* docked at Al Jubayl and offloaded 360 containers carrying the equipment for Navy Fleet Hospital 5. This hospital was staffed by 1,000 Navy medical personnel and had a 500-bed capacity. It required 28 acres of land for installation and was set up near the 7th MEB's MEF forward command post at the Port of Jubayl. Fleet hospitals were third-echelon theater-level medical organizations providing specialty and definitive care to the seriously sick and injured. Fleet hospitals belonged to the U.S. Navy, but their primary customers were Marines who took great interest in their deployment, installation, and operation. By 2 September, Fleet Hospital 5 had 200 available beds.⁷⁰

Between 13 August and 2 September, 56 Marines and sailors of 7th MEB were hospitalized. Twenty-one of these cases were medevaced elsewhere from the Gulf for treatment. On 2 September, 26 Marines and sailors were in the hospital

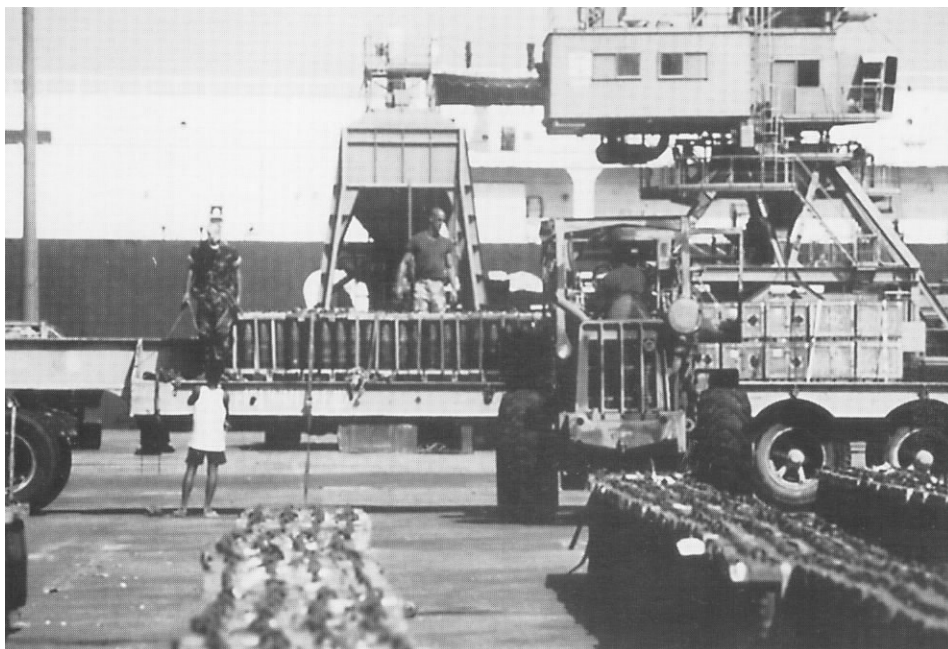


Photo courtesy of LtGen James A. Brabham, Jr.

Marines from BSSG-7 load 155mm projectiles on trucks at the port of Jubayl.

for a wide variety of causes, such as strains, breaks, hernias, chest pain, back pain, asthma, heat casualty, gastroenteritis, and even a case of pneumonia. The 7th MEB reported one suicide attempt, a stabbing, and two shooting cases.⁷¹

Captain Gerardo Guerrero commanded BSSG-7's supply detachment of 13 officers and 293 enlisted Marines and sailors. This detachment stored and issued ammunition, rations, medical supplies, repair parts, and consumable items. In addition, the supply detachment had contracting authority, an important function giving 7th MEB and later I MEF, the ability to obtain critically needed resources from the local economy.⁷²

The 22 sailors of the medical logistics (MedLog) section, stored and issued blocks of medical supplies called authorized medical allowance lists (AMALs) to all medical units within the MEB. This supply organization carried 36 aid station blocks for first-echelon treatment provided by unit aid stations and corpsmen throughout the MEB. Fifteen operating rooms and 33 shock surgical AMALs were stocked for more serious second-echelon medical treatment administered by the Medical Detachment, BSSG-7.⁷³

The supply detachment's ammunition company, which consisted of three officers and 88 enlisted Marines, was responsible for accounting, storing, and issuing ground ammunition. By 2 September 1990, large amounts of ammunition were available for the 7th MEB. There were 15,000 rounds of tank ammunition, 21,000 artillery rounds, and 2,100 ground TOW missiles. By early September, BSSG-7 had distributed 600 short tons of ammunition to forward locations while the 7th MEB had formulated plans to load ground ammunition on two MPSRon-3 ships as floating dumps. The building of ammunition supply points was at the

top of the list of construction projects awaiting the arrival of the Seabees.⁷⁴

On 15 August, the 27 enlisted Marines of the ration's section began issuing "meals ready to eat" (MREs). MREs are the modern version of C-rations, which were individual field rations. MREs consisted of 12 different entree choices, a snack, dessert, powdered beverage, and condiments, giving the diner 1,200 calories of energy per meal. MREs also had a moist towelette for after-meal hygiene. The first three ships of MPSRon-2 gave 7th MEB 689,000 MREs. By 2 September, MRE stocks were increased to 1,800,000 as a result of the influx of rations from MPSRon-3.*

B-Rations were bulk canned and dehydrated foods designed to be heated on messhall stoves and either served in a dining facility or transported to Marines in the field. Due to their perishability, B-rations were not stocked on maritime prepositioning shipping. Marine Corps Logistics Base Albany, Georgia held B-rations which required requisitioning before they were released. On 15 August, I MEF requested a 30-day supply of B-rations from Albany. Despite the lack of B-rations, on 24 August, the 7th MEB opened its first dining facility at the port of Jubayl, preparing a hot breakfast with food donated by the Saudis. As a result of I MEF's requisition, B-rations reached a level of 371,742 meals by 2 September, or enough to serve 7th MEB forces one hot meal for 18 days.⁷⁵

The supply detachment faced shortages of 12-volt batteries, electrolyte for batteries, 30/50 weight oil, and repair parts during the first weeks of the deployment. The battery problem was solved by buying batteries in Saudi Arabia and also flying them in from Camp Pendleton, California. Electrolyte and oil were ordered from the 1st FSSG at Camp Pendleton. There was also a shortage in the stock of repair parts called secondary reparable items. These items were reparable components of a piece of equipment, such as engines and transmissions for tanks and trucks. Secondary reparable items were repaired by the FSSG's maintenance battalion and reused.** The 7th MEB's maintenance personnel reviewed BSSG-7's secondary reparable list and identified items not adequately stocked. The arrival of BSSG-1's parts block on MPSRon-3 increased the volume of needed secondary items, thereby somewhat reducing the concern over the weakness of 7th MEB's reparable block.⁷⁶

On 15 August, five enlisted contracting officers arrived at the port of Al Jubayl. Working from their vehicles and limited to purchases of \$250,000 or less, the contractors procured fuel, bottled water, lumber, 12-volt batteries, porto-potties, and transportation from the local economy.⁷⁷ BSSG-7's contractors took part in negotiations for the use of empty labor camps for billeting in the Industrial City

*Normally, the amount of MREs and other supplies are quantified in terms of "days of supply." In simple terms, a day of supply is calculated by the amount of something divided by a daily consumption factor for an organization. In this instance, the number of days of supply would be meaningless, since the population changed with every aircraft arrival.

**Secondary reparable items requiring rebuild were shipped to Marine Corp Logistics Bases, in Georgia and California, and to the other Services for repair and return to the field.



Photo courtesy of Maj Adrian W. Burke

The unimproved airstrip at Manifah Bay is where CSSD-73 set up its combat service support area to support the 7th MEB's forward elements.

of Jubayl, such as Camp 15 which the Saudis turned over, on 22 August, to the 7th MEB.⁷⁸

Captain Thomas D. Carlson, USN, commanded the 12 officers and 24 enlisted sailors of BSSG-7's dental detachment. This amalgamation of sailors from the 1st, 13th, and 23d Dental Companies, 1st FSSG, opened its first dental clinic, on 22 August, in the east end of warehouse number 3 at the Port of Al Jubayl. The next day a second clinic was established at BSSG-7's aid station. A third dental clinic was set up at the Marine Corps hospital and a fourth opened at Shaikh Isa. Services were limited to emergencies.⁷⁹

The Headquarters and Service Detachment, BSSG-7 provided a number of disparate functions such as postal and legal services. On 21 August, the Postal Section, BSSG-7, manned by one officer and 14 enlisted Marines, received 800 letters. This was the first U.S. mail to reach the area. Three days later, the Postal Section began selling stamps and issuing money orders. On 25 August, the five officers and three enlisted Marines of the Legal Services Section, BSSG-7 opened its doors for business, providing a full range of services to include the ability to hold courts martial. Much of the legal detachment's activities, however, were devoted to issuing wills and powers of attorney.⁸⁰

While RCT-7 moved north into defensive positions, the 7th MEB transferred responsibility of coordinating and controlling security at the Port of Al-Jubayl and the Marine Corps Hospital at Huwaylatt to BSSG-7. This mission required BSSG-7 to coordinate a wide variety of units devoted to security. The

Saudi Navy conducted outer harbor patrols, a special warfare task group defended inner harbor security, a fleet anti-terrorism and security team handled security on the maritime prepositioning ships. Pier-side security consisted of a stinger team from MAG-70 with its anti-air shoulder-fired, heat-seeking missiles; the BSSG-7's military police; and Company I, 3d Battalion, 3d Marines, which on 27 August, arrived from Hawaii.

On the last day of August, a defense team from Naval Inshore Underwater Warfare Group 1 conducted a survey of harbor security. The survey team recommended that a 300-man detachment consisting of boat and underwater sensor sections be flown from the United States to help defend Jubayl's harbor. This detachment would consist of Reserve Coast Guard and Navy personnel.⁸¹

At the Port of Jubayl, BSSG-7 had rapidly established the 7th MEB's general support capability using the conventional FSSG structure and help from the host nations, the U.S. Navy and Army, and the rear at Camp Pendleton, California. For 7th MEB forces in the field, especially RCT-7, Colonel Powell organized combat service support detachments to provide direct support.

Extending Direct Support to Regimental Combat Team 7

Combat Service Support Detachments continue to adjust to the high operational tempo of supported units.⁸² —Commanding General, 7th MEB

The Cement Factory, as seen from the coastal highway, lent its name to the ridge where the 7th MEB set up its defenses of Jubayl.



In response to the mission to support combat units in the field, BSSG-7 formed and deployed combat service support detachments to sustain RCT-7's defense in depth. Combat service support detachments were separate task organizations formed to rearm, refuel, resupply, and/or repair equipment for combat units.⁸³

Combat Service Support Detachment (CSSD) 73 deployed on 21 August 1990. Colonel Powell, the BSSG-7 commanding officer, reassigned his Landing Support Detachment commander, Captain Adrian W. Burke, to command the newly arrived detachment. This organization was tasked with establishing a forward arming and refueling point (FARP) for helicopter operations and to support the 3d Light Armored Infantry Battalion. On 26 August, CSSD-73 became operational at Manifah Bay, Saudi Arabia, located 120 kilometers south of the Kuwaiti border and 100 kilometers north of Jubayl. The helicopter pilots of HMLA-367 named the new site FARP Foss. CSSD-73 set up at an unimproved air strip located 15 kilometers east of the two lane coastal highway connecting Jubayl to Kuwait and five kilometers from a jetty on the Persian Gulf.⁸⁴ A security platoon from Company G, 2d Battalion, 7th Marines, led by Second Lieutenant David P. Casey, joined CSSD-73 on the 29th, and two days later, the 3d Light Armored Infantry Battalion (-) with 25 light armored vehicles moved into the vicinity of the junction of the coastal highway and the road leading to Manifah Bay. The 3d Light Armored Infantry Battalion (-) was RCT-7's covering force. BSSG-7 pushed supplies by ground transportation and by helicopters carrying external loads to CSSD-73. A 5,000-gallon load of fuel initially stocked the CSSD's 12,000-gallon helicopter expedient refuelling system. Near the end of the month, CSSD-73 reached a strength of 90 Marines and sailors and was the northernmost deployed logistics unit in theater, making it the closest fixed target to the Kuwaiti border.⁸⁵

CSSD-72 supported RCT-7, which occupied defensive positions 50 kilometers south of Manifah Bay in the area called the Cement Factory Ridge where a giant cement plant dominated the region's skyline. The CSSD formed at Al Jubayl on 24 August 1990, and was commanded by Captain Kerry K. Feldman.⁸⁶ The 7th MEB tasked CSSD-72 to provide fuel, water, subsistence, limited maintenance, disbursing, postal, and limited legal services to RCT-7. Five days later, CSSD-72 moved 50 kilometers from the port to the Cement Factory Ridge to carry out its assignment.

RCT-7 was in the process of moving to defensive positions, a move that would be completed on 31 August.⁸⁷ CSSD-72 supported four battalions of infantry, as well as tank, artillery, and combat engineer battalions. Two companies of assault amphibian vehicles, a reconnaissance company, and the command element for RCT-7 rounded-out CSSD-72's customer list. Major combat items initially deployed to the Cement Factory Ridge were 26 M198 155mm howitzers, 38 M60 A1 tanks, 84 assault amphibious vehicles, and 54 TOW anti-tank missile systems mounted on M1045 HMMWV TOW carriers.⁸⁸

Table: Regimental Combat Team 7 (RCT-7) on 2 September 1990⁸⁹

Units Supported	Personnel Strengths
RCT-7 Command Element	356
1st Battalion 7th Marines	845
2d Battalion 7th Marines	836
1st Battalion 5th Marine	916
3d Battalion 9th Marines	838
3d Assault Amphibious Battalion	576
3d Tank Battalion	734
3d Battalion 11th Marines	898
3d Combat Engineer Battalion	417
Company C, 1st Reconnaissance Battalion	85
TOTAL PERSONNEL	6,501

Regimental positions straddled the coastal road that ran 180 kilometers north to the Kuwaiti border. CSSD-72 was located 22 kilometers by road from the furthest unit supported and four kilometers from the main supply route to the Port of Jubayl.

Extending Direct Support to Marine Aircraft Group 70

*Never has this squadron been so completely challenged for such an extended period.*⁹⁰ —LtCol Stephen G. Hornberger, CO MWSS-374

After claiming its equipment at the Port of Al-Jubayl, MWSS-374 moved, using its own organic transportation, to King Abdul Aziz Naval Air Station and Jubayl Naval Air Facility.* MWSS-374 was spread thin between the two air fields supporting both helicopter and AV-8B Harrier operations. Accordingly, MWSS-374 was the first organization supported by the Seabees.

At King Abdul Aziz Naval Air Station, MWSS-374 immediately began supporting AV-8B Harrier operations. The heavy equipment section built berms

*The unequal distribution of equipment from MPSRon-2 left MWSS-373 and -374 short on vehicles. (Col Robert W. Coop comments on draft, 9Feb97, Author's Files, hereafter Coop comments).

surrounding a 120,000-gallon-capacity tactical airfield fuel distribution system operated by the squadron's bulk fuel section. Fuel was provided by BSSG-7's 600,000-gallon capacity amphibious assault fuel system filled by the MV *Hauge's* ship-to-shore fuel transfer and by Saudi refuellers. The construction section assisted BSSG-7 engineers in establishing an ammunition supply point for aviation ordnance. On 21 August, the medical section established an aid station and tested the local water to determine its potability. MWSS-374 established a nuclear, biological, and chemical defense capability, arranged for rear area security, and set up its crash, fire, and rescue teams.⁹¹

At Jubayl Naval Air Facility, the MWSS-374 heavy equipment section built berms surrounding two tactical airfield fuel systems operated by the squadron's bulk fuel section. The Saudis provided the fuel. The heavy equipment Marines helped the expeditionary air field section level the ground in preparation for laying 90 sets of AM2 matting covering 76,032 square feet. Arriving on 31 August, the Seabee air detachment of NMCB-5 immediately assisted in putting down aluminum sheets of AM2 matting. This effort increased helicopter parking by 24 spots and reduced the level of flight-line overcrowding. MWSS-374's construction section, later assisted by the Seabees and using lumber procured by BSSG-7's contractors, began building strongback frames for tents, completing 12 by 2 September. Near the end of the month, the squadron's utilities section opened a 12-man shower unit and wired the strongback tents built by the construction section. The utilities section used 29 generators to supply the camp with power.⁹²

Table: Marine Air Group-70 squadrons supported by MWSS-324 at Jubayl Naval Air Facility on 2 September 1990⁹³

Squadron Name	Type Aircraft	Number of Aircraft
HMLA-367	AH-1W Super Cobra UH-1N Huey	14 9
HMLA-369	AH-1W Super Cobra UH-1N Huey	14 9
HMM-161	Ch-46 Sea Knight	12
HMM-165	CH-46 Sea Knight	12
HMH-462	CH-53D Sea Stallion	12
HMH-463	CH-53D Sea Stallion	6
HMH-465	CH-53E Super Stallion	6
HMH-466	CH-53E Super Stallion	8
VMA-311	AV-8B Harrier	20

MWSS-373 collected its equipment at the Port of Al Jubayl and moved to Shaikh Isa Air Base. The motor transport detachment hauled aviation support equipment and ammunition from Mina Suliman Container Port deposited by the MV *Bonnyman* and MV *Fisher*. On 27 August, the wing engineers began base camp construction, building showers, wiring tents, and pouring concrete tent pads. The MWSS engineers built berms for their three tactical airfield refuelling systems operated by the squadron's bulk fuel section.⁹⁴ MWSS-373 began establishing camp services such as food service, billeting, laundry, trash removal, electrical power distribution, and shower facilities to seven fixed-wing squadrons, the command element of MAG-70, and the advance party of the 3d MAW headquarters.⁹⁵

Joining MWSS-373, on 22 August, at Shaikh Isa was Combat Service Support Detachment 71 (CSSD-71) formed at Al Jubayl. Captain Guido G. Aidenbaum commanded CSSD-71, tasked by the 7th MEB to provide fuel, water, subsistence, limited maintenance to ground equipment, disbursing, postal, dental, and limited legal services at Shaikh Isa. On 28 August 1990, CSSD-71 became operational and began setting up assault amphibious fuel systems, completing one and partially finishing another by early September. Major Allen Coulter, BSSG-7's operations officer, had relieved Captain Aidenbaum as the commander of CSSD-71 on 1 September.⁹⁶

Table: Squadrons supported by MWSS-373 and CSSD-71 at Shaikh Isa, Bahrain on 2 September 1990⁹⁷

Squadron Name	Type Aircraft	Number of Aircraft
VMFA-235	F-18 Hornet	12
VMFA-314	F-18 Hornet	12
VMFA-333	F-18 Hornet	12
VMFA-451	F-18 Hornet	12
VMA-542	AV-8B Harrier	20
VMA (AW)-224	A6-E Intruder	9
VMAQ-2	EA6-B Prowler	12

Marine wing service support squadrons, augmented by CSSD-71 and the leading elements of the Seabees, established a logistics capability in support of MAG-70. Their efforts allowed MAG-70 to conduct three days of maximum flight operations from all bases against the Iraqis and established a logistics system that would be expanded in the coming months.

A Logistics Snapshot One Month After the Iraqi Invasion

Logistical Support [was] provided to Marine Air Ground Task Force Elements around the clock.⁹⁸ Commanding General, 7th MEB

By 2 September, the 7th MEB had established a potent in-depth defense supported by a logistics system spanning a distance of 240 kilometers from Manifah Bay, Saudi Arabia, to Shaikh Isa Air Base, Bahrain. This system was created by the logisticians of BSSG-7, MWSS-373, MWSS-374, and the leading elements of Seabees and BSSG-1, who planted the logistics guidon in the Persian Gulf. During the next three months, I MEF would expand and refine the logistics system needed to defend Saudi Arabia and plan a more extensive arrangement to sustain a massive offensive into Kuwait.

Table: 7th MEB logistics structure on 2 September 1990

Location	Logistics Unit(s)	Supported Unit(s)	Distance to Saudi-Kuwait Border
Manifah Bay (FARP Foss)	-CSSD-73	-3d LAI Battalion	120
Cement Factory Ridge	-CSSD-72	-RCT-7	180
Jubayl Naval Air Facility	-MWSS-374 -Arrival Airfield Control Group, BSSG-7 -AirDet, NMCB-5	-MAG-70 (104 helicopters)	195
Port of Jubayl	-BSSG-7 -BSSG-1 -1st FSSG (fwd) COMCBOPAC (FD)	-MPS Ships -7th MEB CE -1 MEF CE 1st MarDiv CE -RCT-3 CE -MAG-24 CE	210
King Abdul Aziz Naval Air Facility	-MWSS-374 -Bulk Fuel Det, BSSG-7 -AirDet, NMCB-4	-MAG-70 (20 Harriers) -2d LAAM Bn	220
Ras Al-Ghar Naval Base	-Engineer Det, BSSG-7	In Preparation for Regimental Combat Team-3	240
Dhahran Air Base	-Arrival Airfield Control Group BSSG-7	-Aerial Port of Debarkation	300
Shaikh Isa Air Base	MWSS-373 CSSD-71	-MAG-70 (89 Fixed Wing Air Craft) -MAG-70 CE -3d MAW CE	360

Defending Jubayl: 3 September-31 October 1990

The Situation

*Defend in sector to protect vital facilities vicinity Al Jubayl.—I MEF
Mission for September-October 1990*

September began with high expectations of an Iraqi invasion of Saudi Arabia. General H. Norman Schwarzkopf believed the primary Iraqi assault route was south along the coastal highway towards the ports of Jubayl and Dammam. Central Command assigned the defense of the coastal avenue of approach to I MEF. Another possible attack route was from the northwest down the Tapline road which intersected the coastal highway in I MEF's area of responsibility near Abu Hadriyah, 70 kilometers northwest of the Port of Jubayl.* The U.S. Army component of Central Command (ArCent) defended the Tapline route with the 101st Airborne and the 24th Infantry (Mechanized) Divisions.** A lateral road, called the A-B Road, connected the Tapline road and the coastal highway 50 kilometers north of Abu Hadriyah, forming a "Triangle." Saudi Arabian forces screened the area north of the Triangle while French, Syrian, Egyptian, and Kuwaiti forces protected a third suspected attack route, west of the Americans.⁹⁹ While Central Command planned the defense of Saudi Arabia, I MEF and its major subordinate commands took charge of Marine forces in Saudi Arabia and Bahrain.***

On 3 September, I MEF replaced 7th MEB, the 1st FSSG absorbed BSSGs-7 and -1, and the 3d MAW became the MEF's air combat element. Three days later, the 1st Marine Division took charge of RCTs -7 and -3. I MEF, 1st FSSG, and, initially, the 1st Marine Division, established their headquarters at the Port of Jubayl. The 3d MAW located its headquarters at Shaikh Isa. To protect Jubayl from the Iraqis, I MEF ordered the 3d MAW to defend the area north of the 1st Marine Division's defense zone around the Triangle. General Boomer ordered the 1st FSSG to support the wing and the division and to plan and supervise rear area security.¹⁰⁰

On 13 September, Marine Air Ground Task Force (MAGTF) 6-90, which sailed from Okinawa in the USS *Dubuque* (LPD 8), USS *San Bernadino* (LST 1189), and USS *Schenectady* (LST 1185), docked at Jubayl. Colonel Ross A. Brown commanded the MAGTF which consisted of the headquarters for

*This road serviced the pipeline that carried oil from eastern Saudi Arabia to Lebanon. It was closed in 1981.

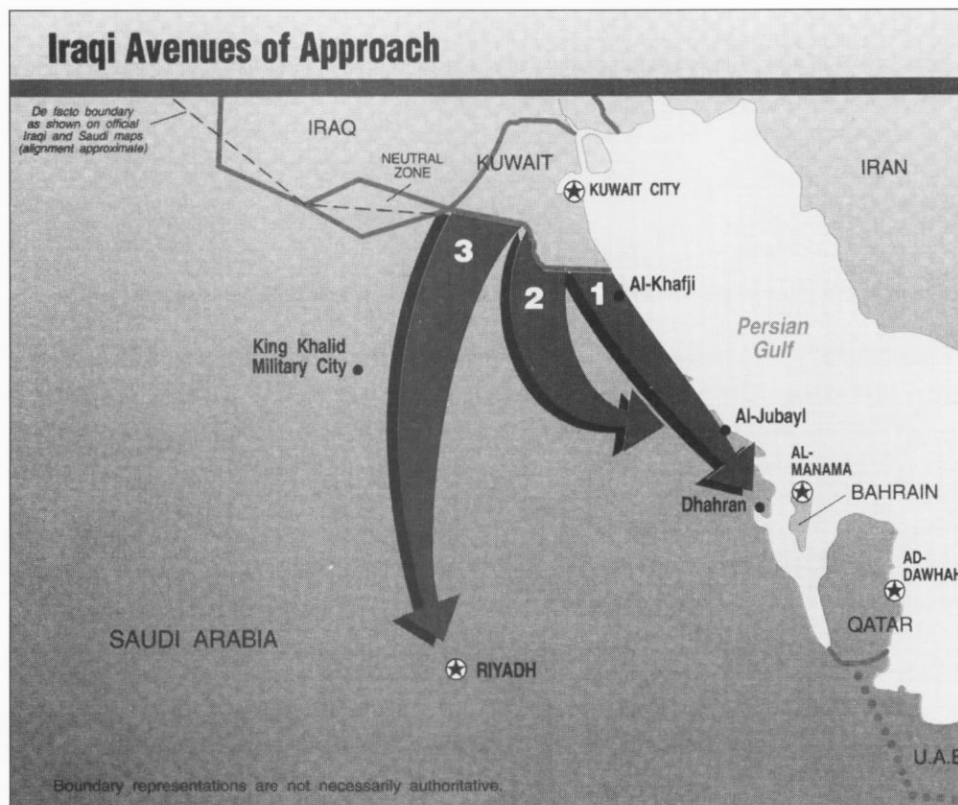
**Further south the 82d Airborne Division guarded oil fields and the 1st Cavalry Division served as a mobile reserve near Dhahran. The XVIII Airborne Corps commanded the Army divisions and served as the tactical headquarters for ArCent.

***The components of CentCom were organized along service lines, with one exception. I MEF served as the Marine component of CentCom, or MarCent, and the Navy, Air Force, and Army components were called NavCent, AFCent, and ArCent, respectively. The Special Operations Command Central Command (SocCent) was the functional command that controlled all special operations in theater.

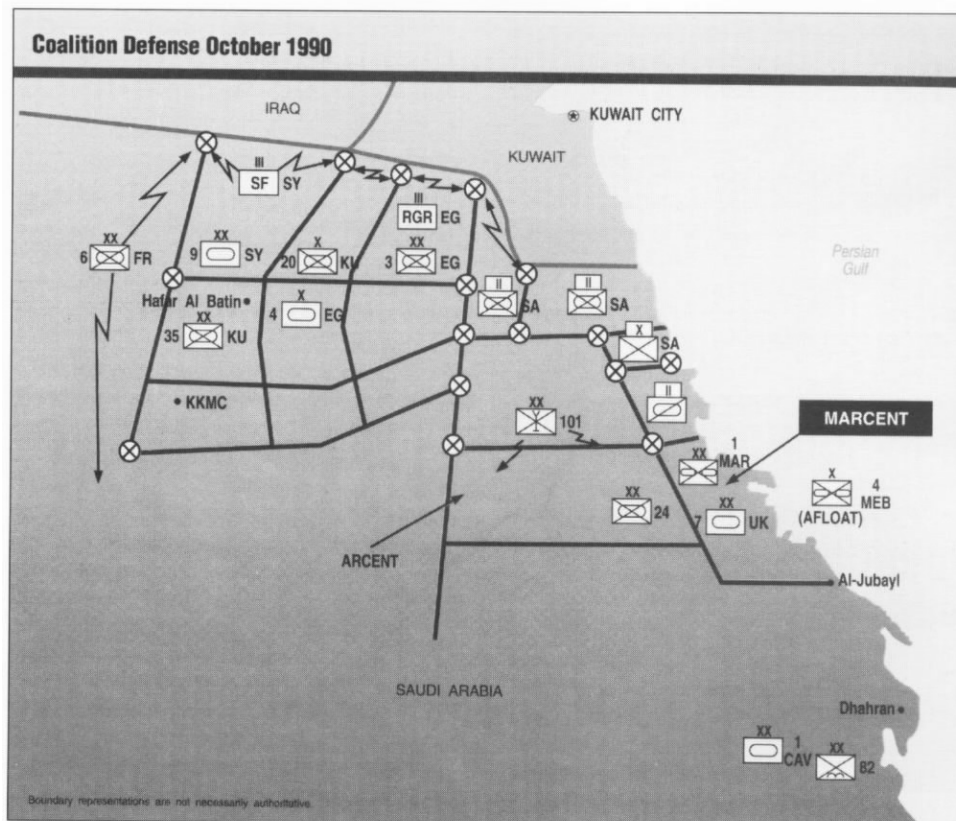
Regimental Combat Team (RCT) 4, the 1st Battalion, 6th Marines, and CSSD-31.¹⁰¹ Major Thomas J. Nielsen commanded the 19 Officers and 261 members of the CSSD which the 3d FSSG formed on Okinawa earlier in August.¹⁰² Upon its arrival in Saudi Arabia, I MEF broke up MAGTF 6-90 and distributed the pieces within the MEF. the 1st FSSG gained CSSD-31 and the command element of RCT-4.

1st FSSG Reorganizes

The I MEF staff was to be sensitive to the fact that, . . . the FSSG and wing, had very thin staffs. —I MEF Command Chronology, September 1990



On 6 September, General Brabham arrived in Jubayl and inherited an organizational challenge.¹⁰³ Facing him were two BSSGs and a CSSD, each of which had similar sets of detachments of varying size and capabilities, but none of which were properly organized to conduct combat service support in the Gulf region. Due to the lack of air transportation, the 1st FSSG's battalion headquarters remained at Camp Pendleton under the command of Colonel Paul A. Pankey.¹⁰⁴ This situation denied General Brabham the command and control capabilities necessary to lead a large organization easily and to take advantage of



the vast amount of experience resident in the battalion staffs.*

To solve these problems, General Brabham reorganized 1st FSSG into a direct support group, a general support group, and a headquarters and services group. General Brabham assigned Colonel Alexander Powell, the former commander of BSSG-7, as the commander of Direct Support Group (DSG) 1, and gave him the responsibility of sustaining the 1st Marine Division and the 3d MAW. Expecting to be the 1st FSSG's operations officer upon arrival, Colonel Thomas E. Hampton, a former infantry officer and Vietnam war veteran from southern Illinois, was instead ordered by General Brabham to take charge of General Support Group (GSG) 1.¹⁰⁵ The mission of this organization was to provide general support to the MEF. To command the Headquarters and Support Group (H&SG), General Brabham tapped Lieutenant Colonel Henry T. Hayden and ordered him to provide internal support to the 1st FSSG, a variety of services to I MEF, and to coordinate port security.¹⁰⁶ General Brabham ordered Colonel Brown to use the RCT-4 headquarters to coordinate security in the vital area around Jubayl.

General Brabham believed that the new FSSG structure was well-suited for the fast changing tactical situation facing I MEF, while effectively using

*On the positive side, the battalion staffs provided stability to the majority of the 1st FSSG personnel who remained at Camp Pendleton until December 1990.



Photo courtesy of LtGen James A. Brabham, Jr.

BGen James A. Brabham, Jr., Commanding General, 1st FSSG, seated at the right of the picture, visits one of his forward CSSDs. Note the Texaco flag on the wall.

scarce administrative assets to run the new organization.¹⁰⁷ Additional benefits were the simplified command structure and the improved mission focus of 1st FSSG's commanders. The costs of the reorganization were the initial confusion and loss of accountability as the people and equipment from both BSSGs and CSSD-31 were distributed throughout the new organizations. The 1st FSSG solved the accountability problem by hard work, time, and the establishment of centralized administration. In addition, the smallness of the 1st FSSG, which was about half its peacetime size, made the reestablishment of responsibility for both people and equipment much easier. The loss of unit identity posed a greater problem for General Brabham as California, Hawaii, and Okinawa Marines left their old units and commanders lost commands. Sensitive to the human dynamics involved in such a comprehensive reorganization, General Brabham spoke at length to all officers and visited the new units after activation. In order to be fair, Brabham used seniority as a basis for determining command and not the geographic origin of the officer.¹⁰⁸

On 9 September, Colonel Powell took charge of Direct Support Group-1 (DSG-1) which consisted of a small headquarters and BSSG-7's three CSSDs.¹⁰⁹ He placed his command element of 13 Marines at the port near GSG-1 and worked within the FSSG to advocate the needs of the forward units, which he believed was his primary job.¹¹⁰ Turning to his CSSDs, Powell redesignated CSSD-73 at Manifah Bay as CSSD-141, but retained Captain Adrian W. Burke as its commander. On 4 September, Colonel Powell stoodup CSSD-111 to support the 1st Marine Division, less units supported by Captain Burke, and assigned Lieutenant Colonel Richard L. Kelly, a supply/logistics officer from Pennsylvania

who served his first years in the Corps as an infantry officer, to command CSSD-111.* On 13 September, CSSD-111 moved to Abu Hadriyah and absorbed CSSD-72 which had previously supported RCT-7 at the Cement Factory Ridge.¹¹¹ At Shaikh Isa, CSSD-71 changed its name to CSSD-131 with Major Coulter remaining in charge. On 26 September, Colonel Powell ordered Captain Guido G. Aidenbaum, the first commander of CSSD-71, to activate CSSD-132 at the Jubayl Naval Air Facility. At the end of September, DSG-1 consisted of 956 Marines and sailors organized into four CSSDs and a command element.¹¹²

Table: CSSD lineage

Old Name	New Name	Location
CSSD-71	CSSD-131	Shaikh Isa
CSSD-72	CSSD-111	Abu Hadriyah
CSSD-73	CSSD-141	Manifah Bay
N/A	CSSD-132	Jubayl Naval Air Facility

On 12 September, Colonel Hampton activated his command element and organized the seven detachments of GSG-1.¹¹³ Lieutenant Colonel Ernest G. Beinhart III, the former commander of BSSG-1, took charge of the landing support detachment. The commanding officers of BSSG-7's medical, dental, and engineer detachments retained their commands. Colonel Hampton ordered Lieutenant Colonel Charlie F. Smith to command the motor transport detachment; Lieutenant Colonel Leon S. Luszczynski, the former executive officer of BSSG-7, to lead the maintenance detachment; and Lieutenant Colonel George M. Conroy to take charge of the supply detachment. GSG-1 consisted of 2,815 Marines and sailors located, primarily, at the Port of Al Jubayl.¹¹⁴

Lieutenant Colonel Hayden organized H&SG into four companies. Captain Timothy M. Wilkinson commanded the headquarters company, Captain Ricardo R. Hackney led the communications company, and Second Lieutenant Gino P. Amoroso took charge of the military police company. These companies supported 1st FSSG. The services company, commanded by Captain Joseph M. Dietzler, provided postal, legal assistance, exchange, disbursing, graves registration, and data processing services to I MEF. In addition, Lieutenant Colonel Hayden was the officer-in-charge of the Critical Facilities Operations Center which implemented security at the Port of Jubayl.¹¹⁵

*LtCol Richard L. Kelly served a tour at Central Command during the mid- 1980s and accompanied Gen Brabham to Riyadh in August. (Col Richard L. Kelly, comments on draft, n.d., Author's Files, MCHC, hereafter Kelly comments).

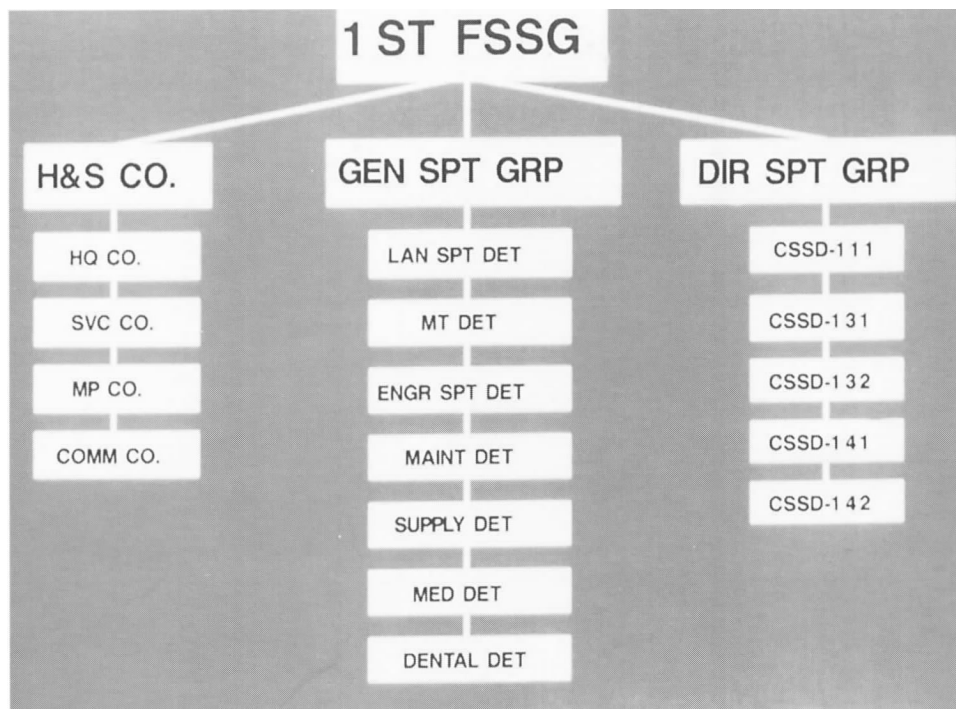


Photo courtesy of LtGen James A. Brabham, Jr.

A briefing slide used by LtGen Brabham that diagrams 1st FSSG Structure in the Persian Gulf.

Supporting the 3d MAW

The immediate priority for the Marines was to expand aircraft parking areas at three host nation airstrips Each of these strips had adequate runways, but lacked the ramps and taxiways to accommodate the number of airplanes which would be based there . . . The Marines' second priority was to improve berthing areas for their troops.¹¹⁶

On 3 September, Major General Moore organized the 3d MAW's 246 aircraft into three aircraft groups. At Shaikh Isa, MAG-11 took operational control of all fixed-wing squadrons, at Jubayl Naval Air Facility, MAG 16 directed helicopter operations, and at King Abdul Aziz Naval Air Station, MAG-13 (forward) supervised Harrier jet and Rockwell OV-10 Bronco light reconnaissance aircraft operations. The three air groups and airfields formed the main hubs of the 3d MAW's defensive effort. Eventually the wing also established smaller operating areas at Ras Al Ghar and Manifah Bay which were also sustained by its three support squadrons, the 1st FSSG, and the Seabees.¹¹⁷

Table: 3d MAW squadrons and aircraft.¹¹⁸

Location	Squadrons	Number/Type of Aircraft
Manifah Bay (MAG-16)	HMLA-369 (Det)	8 AH-1W Super Cobras 2 UH-1N Hueys 4 CH-46s Sea Knights
Jubayl NAF (MAG-16)	HMLA-367/369	19 AH-1W Super Cobras 16 UH-1N Hueys
	HMM-161/165	24 CH-46E Sea Knights
	HMH-462/463	16-20 CH-53D Sea Stallions
King Abdul Aziz (MAG-16)	VMA-311	20 AV-8B Harriers
	VMO-2	8 OV-10 Broncos
Ras Al Ghar	HMH-465/466	15 CH-53E Sea Stallions
	HMH-462	4 CH-53D Sea Stallions (9-26 Sep)
Dhahran (MAG-16)	HMLA-269	12 AH-W Super Cobras
Shaikh Isa (MAG-11)	VMFA-235/314/ 333/451	48 F/A-18 Hornets
	VMA-542	20 AV-8B Harriers
	VMA (AW)-224	10 A6-E Intruders
	VMAQ-2	12 EA-6B Prowlers
Bahrain Int (MAG-11)	VMGR-352	8 KC-130 Refuellers

The Seabees Arrive

To improve the capabilities of host nation airdromes, I MEF sent most of the arriving Seabees to airfields in Saudi Arabia and Bahrain. On 13 September, 136 sailors and 46 pieces of equipment belonging to NMCB-7's air detachment, led by Navy Lieutenant Michael Dolan, landed at Shaikh Isa. On 30 September the advance party arrived and was followed on 2 October by the MV *Danah* which docked at Mina Suliman with the battalion's equipment. Nine days later, the main body of NMCB-7, commanded by Commander Gary M. Craft, reached Shaikh Isa which completed the battalion's deployment from Okinawa.¹¹⁹ On 14 September, the advance party and air detachment of the Guam-based NMCB-40



Photo courtesy of LtGen James A. Brabham, Jr.

GSG-2 engineers dig and transport marl to stabilize the soil at Jubayl Naval Air Facility.

reached the Port of Jubayl with 189 Seabees and 40 pieces of equipment. Four days later the battalion's equipment on board the MV *Maersk Constellation* docked at Jubayl and was followed on the 27th by the main body of the battalion, commanded by Commander John R. Doyle. During the last week of September, the advance party of NBCB-5 arrived in Saudi Arabia and joined its air detachment at Jubayl Naval Air Facility.¹²⁰ On 7 October the MV *Greenridge* arrived with NBCB-5's equipment and the next day, Commander David Walsh landed with the remainder of the battalion. On 15 October, the MV *Kubbar*, carrying NMCB-4's equipment, dropped anchor at Jubayl while the main body, led by Commander James Corbett, landed in Saudi Arabia. NMCBs-4 and -40 took over Camp 13 in the Industrial City and called their new home Camp Rohrbach.¹²¹ On 15 October, Captain Johnson commanded a force of 2,397 sailors and 1,125 pieces of equipment in general support of I MEF which in turn, directed the main Seabee effort to the expansion of aircraft parking at all three major air bases.¹²²

Jubayl Naval Air Facility

The overcrowded flight line was the main problem facing MAG-16 at Jubayl Naval Air Facility.¹²³ The additional aircraft parking completed in August failed to relieve the congestion caused by 102 Marine Corps, 12 U.S. Army, and 10 Royal Saudi Navy helicopters crammed into the airport.¹²⁴ The risks of flight-line crowding were painfully demonstrated on 13 September when the rotor blade from a taxiing CH-53E hit the rotor of another Sea Stallion parked nearby, and damaged both aircraft as well as a neighboring Saudi chopper.¹²⁵ To alleviate overcrowding temporarily, MAG-16 dispatched 19 Sea Stallions 60 kilometers southeast to the Royal Saudi Navy Base at Ras Al Ghar and 14 helicopters to Manifah Bay.¹²⁶ The long-term problem, however, still remained.

To solve the congestion problem, the Navy-Marine Corps team of MWSS-374 and NMCB-5 began constructing three parking aprons covering 1.8 million square feet of desert. Site preparation required that loose sand be reinforced with up to three feet of structural fill, compacted, and leveled to a three per cent minimum grade to support the strips of aluminum AM2 matting used to lay the parking ramps. NMCB-5, reinforced with equipment from NMCBs-4 and -40 and GSG-1 as well as the Marines of MWSS-374, strengthened the sand with marl, quarried and hauled from a nearby pit by GSG-1 and the newly arrived MWSS-174.* On 10 September, NMCB-5, MWSS-374, and MWSS-174 joined together to lay 120,264 square feet of matting which exhausted the available supply until 14 October, when additional matting arrived on the MV *Greenridge*. Engineers placed the AM2 matting in a checkerboard pattern with a hole in the middle like a square donut to conserve the amount of material used. By the end of October, the Marines and the Seabees completed 76 percent of Parking Apron 2 and 18 percent of Parking Apron 3.¹²⁷

Concurrent with the construction of helicopter parking, teams of Marines and Seabees built and operated facilities for MAG-16. The Seabees from NMCB-5 worked two 10-hour shifts to fabricate frames and decks which a second set of Seabees nailed together to create a tent structure with flooring. Following the Navy, the Marines of MWSS-374 hung canvas and wired the tents for electricity. Despite a shortage of construction material, nearly 350 tents were completed by the end of September. To feed the multitude of pilots and support personnel, the NMCB-5 erected a galley which MWSS-374 operated. To repair aircraft, MWSS-374, with the help of MWSS-174, constructed a 10,000-square-foot clam-shell hangar.¹²⁸

As grateful helicopter pilots moved their sleeping bags from the sand to tents with floors and electricity, MWSS-374 retrieved its detachment from King Abdul Aziz Naval Air Station and focused efforts on supporting MAG-16's extended operations.¹²⁹ On 24 October, MWSS-374 conducted forward arming and refueling (FARP) operations for the CH-53D Sea Stallions of HMH-462. Refueling was conducted from the back of an LVS with fuel stored in sixcon fuel modules. In addition, the squadron sent a detachment to Manifah Bay to lay 14,000 square feet of matting to support helicopter operations at FARP Foss.¹³⁰ In the meantime, CSSD-132, operating at the air station since late September, provided dental treatment, medical care, and, by the end of October, issued 972,000 gallons of fuel to MWSS-374.^{131**}

*Marl is a mixture of clays, carbonates of calcium and magnesium, and remnants of shells used as structural fill to stabilize soil.

**MWSS operations were initially degraded by the shortfall in communications equipment allowed by their tables of equipment. To counter this deficiency, Gen Moore directed Col Coop, the acting 3d MAW logistics officer and commanding officer of MWSSG-37, to purchase 200 Motorola wireless radios and a number of low wattage power units. This ad hoc communications system was ideal for MWSS operations. The Motorolas eliminated the need to string and maintain miles of wire around runways and their low power output limited the system's range and vulnerability to enemy monitoring. (Coop comments).

King Abdul Aziz Naval Air Station

At King Abdul Aziz Naval Air Station, General Moore placed MWSS-174 in direct support of MAG-13 (Forward). Lieutenant Colonel James P. Chessum commanded MWSS-174 which came from Hawaii as part of the 1st Marine Brigade. In early August, MWSS-174 sent personnel from Hawaii to Guam with the 1st MEB's preparation party to make ready equipment for unloading while MPSRon-3 steamed towards Jubayl. Two weeks later, another group from MWSS-174 flew to Saudi Arabia to help unload MPSRon-3. MWSS-174's advance party and main body followed, bringing the squadron's personnel strength to 526 Marines and sailors who joined the 137 Seabees of NMCB-4's air detachment at King Abdul Aziz Naval Air Station.¹³²

Going to work on 4 September, the Navy-Marine Corps team of MWSS-174 and NMCB-4's air detachment expanded taxiways and aircraft parking spaces. Construction started on a 3,600-foot taxiway and 20 dug-in parking spots for the Harriers of VMA-311. To stabilize the sand, which was not as deep as the sand at Jubayl Naval Air Facility, the Seabees used soil cement, while the MWSS-174 Marines compacted and graded the taxiway prior to laying AM-2 matting. Towards the end of September, NMCB-4 began a 22,500-square foot Harrier jet vertical take-off and landing pad, a second taxiway, eight revetments for the OV-10 Broncos of VMO-2, a helicopter refuelling pad, and a Harrier engine test stand.¹³³ The arrival of AM-2 matting on board the *Greenridge* allowed MWSS-174 and the Seabees to lay 373,790 square feet to complete the taxiway, parking, and landing pad by the end of October. During October, CSSD-132 established a refueling operation and issued 1,281,000 gallons of fuel to MWSS-174.¹³⁴

MWSS-174 operated primarily at King Abdul Aziz Naval Air Station, but deployed detachments to Jubayl Naval Air Facility, Manifah Bay, and Ras Al Ghar. MWSS-174, took over refuelling, military police, rear area security, weather reporting, communications, medical, chaplain, crash and fire rescue, and mess hall operations at King Abdul Aziz from MWSS-374.* To augment other 3d MAW operations, Lieutenant Colonel Chessum sent a crash and fire rescue team and engineers to Jubayl Naval Air Facility. He also ordered a tactical assault fuel distribution system, one ROWPU, and an engineer detachment to forward arming and refueling point (FARP) Foss. During September, the motor transport detachment drove 81,294 miles and hauled 1,740 tons of cargo and 9,367 passengers to support the squadron's far-flung operations which included operations at Ras Al Ghar.¹³⁵

*MWSS military police (MP) operations were initially hampered by the lack of equipment. In the United States, the MWSS military police worked for the installation commanders who owned and maintained their equipment. When the MPs deployed for war with their parent squadrons, their equipment remained at the U.S. installations. As a result, the MWSSs had to scrounge radios, vehicles, and crew-served weapons after the MPs arrived in the Gulf. (Coop Comments).

Ras Al Ghar

During September, Ras Al Ghar absorbed both ground and aviation units awaiting deployment to forward locations. On 8 September, MWSS-174 joined the 1st FSSG and RCT-3 at the Saudi naval base. On this day, seven members of the crash and fire rescue team with a fire truck arrived to support MAG-16's CH-53 Sea Stallion helicopters relocated from Jubayl Naval Air Facility. Four days later, six of the squadron's bulk fuel Marines, equipped with a helicopter expedient refueling system and a M970 5,000-gallon tanker, established a helicopter refuelling point. On the 15th, MWSS-174 set up a communication site while the utilities section wired 80 tents, erected a shower unit, and left three generators to power the tent camp for the helicopter squadrons.¹³⁶ During the month, GSG-1 opened a dental clinic and its engineers built strong-back frames for RCT-3.¹³⁷

Shaikh Isa

At Shaikh Isa, MWSS-373 and NMCB-7 built facilities for the 3d MAW's headquarters and MAG-11's seven jet squadrons. During the first part of the month, MWSS-373 completed the installation of a shower, wired 3d MAW's headquarters tents for electricity, and poured concrete foundations for tents. On the 13th, 136 Seabees and 46 pieces of equipment from NMCB-7's air detachment, led by Lieutenant Michael J. Dolan, USN, arrived from Okinawa. Lieutenant Dolan built a tent camp for the 3d MAW headquarters in which the Seabees laid more than 600 concrete slabs and fabricated and erected 416 frames for both berthing and office spaces. On 15 September, the Seabees leveled a temporary bomb storage and container stacking area and began building an ammunition supply point for MAG-11 which they completed in little more than a month. Reinforced by the battalion's main body on 11 October, NMCB-7 began the expansion of the runway apron on the 15th. The Seabees leveled, compacted, and reinforced with fill purchased locally Shaikh Isa's loose soil prior to laying 600,000 square feet of AM2 matting. NMCB-7 completed this project on 19 December.¹³⁸

While the sailors of NMCB-7 expanded facilities at Shaikh Isa, MWSS-373 and the newly redesignated CSSD-131 supported MAG-11's operations. Though MWSS-373 also assisted the 3d MAW at other locations, at Shaikh Isa, Lieutenant Colonel Hanson focused the squadron's main activities on providing camp services, conducting crash and fire rescue missions, recovering aircraft, and refuelling MAG-11's jets with fuel provided by CSSD-131.¹³⁹ In September, CSSD-131 grew to a strength of 142 Marines and sailors. It erected a second amphibious assault fuel system, and provided MWSS-373's three tactical fuel dispensing systems with 100,000 gallons of fuel per day throughout October.¹⁴⁰ MWSS-373 extended its operations outside of Shaikh Isa by building a guard tower for the KC-135 Hercules refuellers of VMGR-352 at Bahrain International Airport and by sending expeditionary airfield personnel and crash and fire rescue teams to assist MWSS-374 at the Jubayl Naval Air Facility.¹⁴¹

Table: I MEF Logistics Support

Location/Supported Units	Supporting Units
Manifah Bay (FARP Foss)/1st MarDiv	CSSD-141
Abu Hadriyah & Cement Ridge/ 1st MarDiv	CSSD-111, CSSD-142 (FASP-1 & FASP-2)
Jubayl Naval Air Facility/MAG-16	MWSS-374, NMCB-5, CSSD-132
King Abdul Aziz Naval Air Station/ MAG-13 (Fwd)	MWSS-174, NMCB-4 Air Detachment, CSSD-132 (Annex)
Ras Al Ghar/MAG-16 & RCT-3 (Rear)	Det MWSS-174
Port of Jubayl & Industrial city/I MEF and 1st FSSG Headquarters and 1st MarDiv (Rear)	GSG-1, DSG-1, H & SG, COMCBPAC Foxtrot Delta CE, NMCB-40, and NMCB-4 (-)
Shaikh Isa/MAG-11, 3d MAW Headquarters	MWSS-373, CSSD-131, and NMCB-7

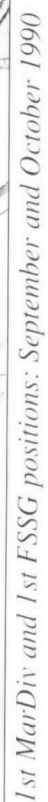
Supporting the 1st Marine Division

CSSDs were highly active in support of their forward deployed customers.¹⁴²

September: Supply Point Distribution

During September, General Myatt organized the 1st Marine Division into two regimental combat teams, an artillery regiment, a screening force, and a mobile rapid-reaction force. RCT-7, redesignated as Task Force Ripper, moved 40 kilometers northwest of its August position at the Cement Factory Ridge and established defenses inside the Triangle. The headquarters of the 1st Marine Division, 11th Marines, and the 3d Amphibious Assault Battalion moved outside of the Triangle above the Abu Hadriyah intersection. South of the Triangle, RCT-3 set-up at the Cement Factory Ridge, prepared for helicopter operations, and guarded the coastal road below the Triangle. In the northeastern part of the Triangle, the 1st Light Armored Infantry Battalion, dubbed Task Force Shepherd, maintained its headquarters near the intersection of the coastal highway and the Manifah Bay road at the “Chicken Ranch” while its LAVs roamed north and west.¹⁴³ The mechanized 3d Battalion, 9th Marines, moved just below the northeast corner of the “Triangle” to serve as the division’s mobile rapid reaction force. Pundits called this battalion the “speed bump” in honor of its point position and presumed effect against an Iraqi attack. CSSD-141, located 20 kilometers east of the “speed bump” at Manifah Bay, supported I MEF’s northern forces.¹⁴⁴

During the month of September CSSD-141, commanded by Captain Adrian W. Burke, grew to 208 Marines and sailors who provided supply point dis-



tribution to 3,875 Marines of Task Force Shepherd; 3d Battalion, 9th Marines; 1st Reconnaissance Battalion; and a detachment of 3d MAW helicopters stationed at Manifah Bay. Additionally, CSSD-141 sustained force reconnaissance Marines and elements of the Naval Special Warfare Group located 70 kilometers north of Manifah Bay at the Port of Mishab.¹⁴⁵ Supply point distribution required that customers travel to the combat service support area to pickup supplies.¹⁴⁶ Delivery to the supported unit, or mobile resupply, was out of the question, since the CSSD lacked a motor transport capability until the last week of September.^{147*}

Burke's Marines and sailors provided fuel, repair parts, water, medical supplies, and MREs to its supported units. Eleven ROWPUs purified Persian Gulf water, which was stored in four 50,000-gallon bags for all units north of Jubayl Naval Air Facility, to include most division units supported by CSSD-111.^{148**} Captain Burke stocked 69 TOW and 32 Hellfire anti-armor missiles and provided security and logistics support for eight AH-1W tank-killing Super Cobras and their crews, four Bell AH-1 Hueys, and two Sikorski CH-46 Sea Knight medevac helicopters.¹⁴⁹ Helicopters parked on matting laid by both CSSD-141 and detachments from MWSS -174 and -374.¹⁵⁰ On 18 September, GSG-1 sent the CSSD a collecting and clearing company which provided resuscitative treatment, surgery, blood transfusions, and hospital recovery to its patients.¹⁵¹ Navy Lieutenant Michael E. Eby led CSSD-141's medical detachment while Navy Captain John A. Ungersma supervised the Navy surgeons who ran a field hospital with one operating room and a ward of 40 cots.¹⁵² Still the most northern Marine logistics unit in the Gulf region, CSSD-141 provided combat service support to I MEF's most forward units, while CSSD-111 sustained the main body of the division south of Manifah Bay.¹⁵³

Lieutenant Colonel Richard L. Kelly began establishing CSSD-111 on 11 September near the Abu Hadriyah intersection of the Triangle. Close at hand were the headquarters of the 1st Marine Division, 11th Marines, and 3d Assault Amphibious Vehicle Battalion. Located north of CSSD-111 were Task Force Ripper, the 1st Tank Battalion, and two battalions of artillery. To shield CSSD-111 from enemy fire from the north, Kelly placed the CSSD behind a ridge line that ran from the southwest to the northeast.¹⁵⁴ To the south of CSSD-111 around the Cement Factory Ridge, RCT-3, the 1st Combat Engineer Battalion, and an artillery battalion set up positions. At the Cement Factory Ridge, Second Lieutenant David J. Eskelund commanded a small detachment of 50 Marines, called CSSD-111 (South), which remained at CSSD-72's old location and supported the division units.^{***} By the end of September, CSSD-111 with 419 logisticians, supported 5,410 Marines and sailors of the 1st Marine Division.¹⁵⁵

*The doctrinally correct term for mobile resupply is unit distribution.(FMFM 4-1, p. 7-6).

**CSSD-141 produced 4 million gallons of potable water between mid-September and December 1990. (Burke Comments).

***In mid-October, CSSD-111 (South) deactivated and moved to Abu Hadriyah. (DSG-1, "Incorporation of Ammunition Company, Supply Detachment into Direct Support Group One," 6Oct90).

CSSD-111 used supply point distribution to provide MREs, repair parts, some construction materials, water, and fuel to the 1st Marine Division, as well as maintenance, helicopter support, vehicle recovery, and dental and medical services. CSSD-111 hauled water with both military and civilian trucks from Captain Burke's ROWPUs and the nearby Jubayl desalinization plant.¹⁵⁶ By the end of September, the CSSD stored up to 150,000 gallons of water and stocked 720,000 gallons of fuel.¹⁵⁷ On 21 September, GSG-1 delivered a supply block with 4,000 line items and 250 different kinds of secondary repairables. CSSD-111's new supply detachment, which was the supply detachment from CSSD-31 which arrived from Okinawa, managed the parts blocks.¹⁵⁸ The availability of repair parts helped the 1st Marine Division achieve an average monthly equipment readiness rate of 93 percent.¹⁵⁹ On 29 September, GSG-1 transferred a collecting and clearing company with two operating rooms and 64 cots to CSSD-111. On the last day of the month, Colonel Hampton sent Lieutenant Colonel Kelly a motor transport company giving CSSD-111 the ability to begin mobile resupply training with Task Force Ripper and RCT-3.¹⁶⁰

Neither CSSD-111 nor CSSD-141 stored ammunition for the 1st Marine Division. GSG-1 supported the division until the Seabees established ammunition dumps and DSG-1 took over their operation. In early September, GSG-1 continued BSSG-7's push of two days of ammunition to the Cement Factory Ridge.¹⁶¹ On 5 September, Seabees from NMCB -4, -5, and -40, together with engineers from GSG-1, began constructing Forward Ammunition Storage Point (FASP) 1, two kilometers from the coastal road near the Cement Factory Ridge. Navy and Marine Corps engineers constructed 540 ammunition modules and a system of

1st Marine Division Marines work out with weights and relax at a recreational center in the Industrial City of Jubayl.

Photo courtesy of LtGen James A. Brabham, Jr.



access roads. Each module was 32 feet wide by 70 feet long, surrounded on three sides by berms, and opened on the fourth side to an access road. A 10-foot-high security and blast berm surrounded the FASP. Upon completion of an ammunition module, GSG-1 ammunition specialists filled the cell with munitions from 546 containers brought in by truck convoys protected by MAG-16's Super Cobra helicopters. One hundred and forty ammunition technicians from GSG-1 operated FASP-1 which was the first of two ammunition supply points constructed near the Cement Factory Ridge.

On 29 September, NMCB-40 and GSG-1 engineers began scraping out FASP-2 from an abandoned quarry near Jabal Al Hadaruk, located 10 kilometers south of the Cement Factory Ridge. The Seabees used 350,000 yards of fill to build the perimeter and the ammunition storage modules and additionally constructed a helicopter pad and guard towers. The Seabees completed FASP-2 in November, but GSG-1 filled each module with ammunition as soon as it was built. The construction of FASPs -1 and -2, together with the deployment of CSSDs -111 and -141, gave the 1st Marine Division the wherewithal to counter any Iraqi forces bold enough to challenge the 3d MAW's aerial cover.¹⁶²

Table: The 1st Marine Division's major weapons¹⁶³

Weapon Category	Number (Type) Weapons
Artillery	68 M1 98 155mm Towed Howitzers 6 M109A3 155mm Towed Howitzers 6 M110A2 8" Self-Propelled Howitzers
Amphibious Assault Vehicles (LAVs)	212 AAVP7A1 (Personnel) 21 AAVC7A1 (Communications) 8 AAVR7A1 (Recovery)
Light Assault Vehicles (LAVs)	22 LAV-AT Antitank 60 LAV-25 (25mm Chain Gun) 10 LAV-L (Logistics) 10 LAV-M (Mortar) 8 LAV-CC (Communications) 5 LAV-R (Recovery)
Tank/Antitank	116 M60A1 Tank 7 M60 Tank with M9 Bulldozer Blade 11 M88A1 Tank Retriever 218 TOW Antitank missile launchers

October: Mobile Resupply

During October, Central Command assigned the British 7th Armoured Brigade, more familiarly known as the "Desert Rats," to the 1st Marine Division which significantly increased the division's mobility and firepower. Brigadier General Patrick Cordingley commanded the brigade, which consisted of infantry, artillery, and engineer units, two tank battalions, and a reconnaissance squadron,

which were logistically supported by a brigade maintenance area.¹⁶⁴ General Myatt designated the British unit as the division's reserve and assigned it positions a few kilometers southwest of Jubayl Naval Air Facility along the coastal road.¹⁶⁵ The 1st FSSG helped to move the Desert Rats and gave them fuel, food, and water, until the British established their own supply lines.¹⁶⁶ With a strong ground defense in place and the likelihood of an Iraqi invasion receding, General Myatt rotated personnel from forward areas to camps in the Industrial City to rest, relax, and wash clothing, while DSG-1 remained in the field and expanded its support.*

Table: The British 7th Armoured Brigade¹⁶⁷

Unit Designation	Type/Size Unit
Queen's Royal Irish Hussars	Tank Battalion
Scots Dragoon Guards	Tank Battalion
Staffordshires	Infantry Battalion
40th Field Artillery	Artillery Battalion
21st Royal Engineers	Engineer Battalion
Queen's Dragoon Guards	Reconnaissance Squadron
Brigade Maintenance Area	Combat Service Support Detachment

During the month of October, Colonel Powell concentrated his efforts on improving support and consolidating his command. He remained at the port to campaign for the needs of the supported units and the CSSDs. His presence ensured that the 1st FSSG filled 94 percent of the support requests forwarded by DSG-1 during October. The DSG commander worked to gain control of personnel assignments by successfully urging the reinstatement of group special orders to transfer personnel within 1st FSSG commands and by establishing the use of DSG-1 orders to manage assignments within his command. The size of DSG-1 increased with the fleshing-out of CSSD-132 at Jubayl Naval Air Facility and the addition of CSSD-142.¹⁶⁸

Control of ammunition for the 1st Marine Division became a problem which Colonel Powell worked to improve in early October. Ammunition technicians, who lacked forklifts to move ammunition and radios to talk to supported units, had implemented non-responsive peacetime paper-work-intensive requisition procedures at FASPs -1 and -2. The sole purpose of the FASPs, although under GSG-1's control, was to support the 1st Marine Division, which was

*The division's rotation policy was a sore point with many DSG-1 Marines, who remained in the field for the duration of the deployment. According to Maj Burke, "the CSSD's did not have the personnel to afford this luxury." (Burke comments).

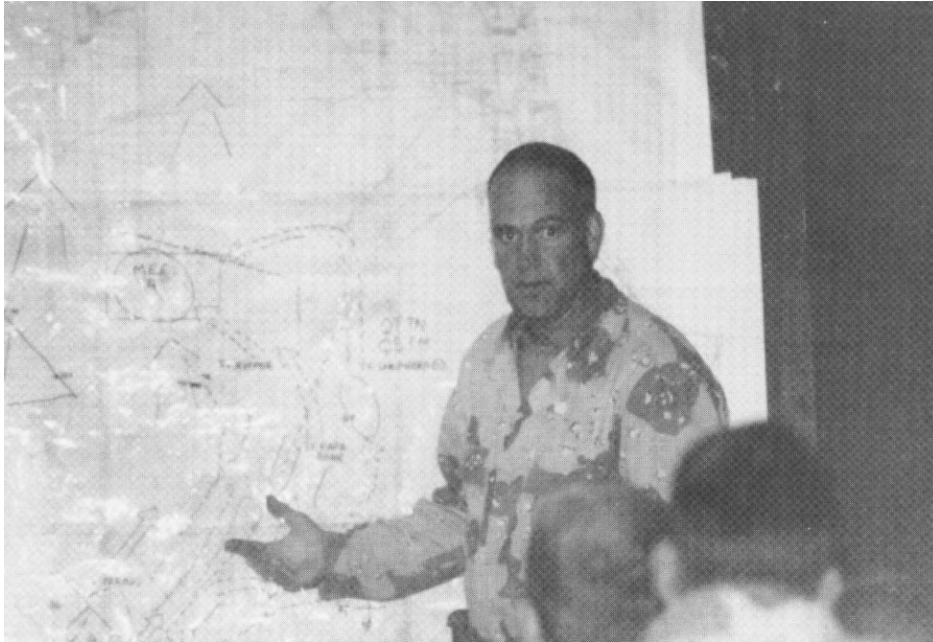


Photo courtesy of Col Alexander W. Powell

Col Alexander W. Powell, Commanding Officer of BSSG-7 and DSG-1, briefs his plans.

Colonel Powell's responsibility. To address these problems, Powell recommended and General Brabham approved the creation of CSSD-142 to operate the FASPs. On 17 October, Colonel Powell formed CSSD-142 by combining FASP-1 and FASP-2 under the command of First Lieutenant Nello E. Dachman, who immediately eliminated the onerous bureaucratic procedures while Colonel Powell obtained forklifts and radios for the new CSSD. Additionally, Powell asked the division to work with his CSSD commanders to identify unit munitions requirements. This effort resulted in CSSD-142 constructing helicopter-transportable emergency resupply blocks.* After the creation of CSSD-142, division units could call for ammunition by radio and have their munitions quickly flown to them from FASP-2's helo-pad.^{169**}

At Jubayl Naval Air Facility, Colonel Powell expanded and extended CSSD-132's ability to support the 3d MAW and the 1st Marine Division. Captain Aidenbaum, the commanding officer of CSSD-132, received a landing support detachment from GSG-1, which gave DSG-1 the capability of delivering supplies by helicopter to the division. A further method of aerial resupply was added when Colonel Hampton transferred GSG-1's air delivery platoon to CSSD-132. On 17 October, the air-delivery Marines parachuted supplies to CSSD-141 for the first time. To improve support to the wing, on 19 October, CSSD-132 extended ser-

*The 3d Battalion, 9th Marines, and CSSD-141 collectively urged the creation of helicopter transportable ammunition packages. Both commands were the closest to the enemy and furthest from FASPs -1 and -2. (Burke comments)

**To refine artillery ammunition resupply techniques, CSSD-111 reviewed each delivery with the battalions of the 11th Marines. (Powell comments).

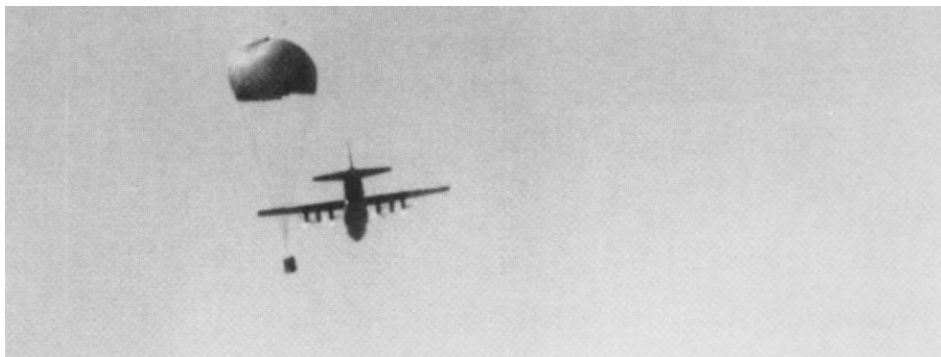


Photo courtesy of Maj Adrian W. Burke

A Marine KC-130 Hercules cargo plane air-delivers supplies to CSSD-141 at Manifah Bay. The Air Delivery Platoon, CSSD-132, packed the parachute, and rigged the cargo for the drop.

vices to King Abdul Aziz Naval Air Station by opening a satellite detachment. Although DSG-1 supported both the division and the wing, Colonel Powell increasingly focused on division operations, emphasizing responsiveness and tactical mobile resupply to the forward units.¹⁷⁰

At Manifah Bay, CSSD-141, under Captain Burke, moved from supply point distribution to mobile resupply. Burke's landing support Marines conducted helicopter support team (HST) operations.* His "Red Patch" Marines slung 500-gallon fuel pods under helicopters which flew them to refuel the far-ranging LAV's of Task Force Shepherd; practiced flying emergency resupply ammunition packages with the 3d Battalion, 9th Marines; rigged British vehicles for helo-lift; and trained with the 3d Marines for their helo-borne assault.^{171**} The new truck detachment received from GSG-1 at the end of September, allowed Captain Burke to begin night tactical resupply of the 3d Battalion, 9th Marines' Task Force Shepherd; and elements of RCT-3. Suffering from the lack of Global Prepositioning Systems (GPS) and night vision equipment, convoy leaders used maps, compasses, and intuition to drive their trucks by the dim glow of black-out lights to rendezvous points 30-40 kilometers from the CSSD. From there, a unit guide would lead the convoy to a supply point. Both the CSSD and the supported unit would set up perimeter security, prior to the unit moving through to obtain water, fuel, MREs, ammunition, and repair parts. Noise and light discipline were strictly maintained in order to practice the survival skills needed in combat. The resupply trucks were arranged in a line with fuel on one end and ammunition on the other. Refuelling was a problem because HMMWV's and 5-ton trucks had gas

*HST is a task organization formed and equipped in a landing zone to facilitate the landing and movement of the helicopter-borne troops, equipment, and supplies, and to evacuate selected casualties and prisoners of war. (FMFM 4-1 Combat Service Support).

**Landing support Marines wear a distinctive red patch on the sides of their trousers at knee-level, and on their helmets for easy identification on a beach or in a landing zone. Accordingly, these Marines are commonly referred to as "Red Patchers." (Kelly comments).

tanks on different sides causing the CSSD either to reverse the flow of vehicles entering the refuelling area or to establish duplicate refuelling stations. In time, the Marines refined their procedures to refuel efficiently the LAVs, AAVs, HMMWVs, tanks, and 5-ton trucks.¹⁷²

Near the bottom of the Triangle, CSSD-111 continued to support the main body of the 1st Marine Division and aggressively trained during the day and night. CSSD-111 improved its ability to provide maintenance contact teams, conduct tactical security operations, and defend against chemical and biological attacks. Like CSSD-141, Lieutenant Colonel Kelly trained the truck company, transferred from GSG-1 in September, to conduct mobile resupply with division units.¹⁷³ CSSD-111 obtained more efficiency from its truck fleet when it discovered an artesian well used by the local camel herders, six kilometers from Abu Hadriya. This discovery reduced the amount of water the motor transport detachment hauled from Manifah Bay and Jubayl and increased the availability of trucks to use for mobile resupply. In addition to supplying the 1st Marine Division, CSSD-111 gave water and fuel to U.S. Army units moving inland to defensive locations. The CSSD distributed 760,000 gallons of fuel to both Army and Marine units during October and established a positive long-term relation with the Army.^{174*} During the month, the unit's maintenance and supply operations helped keep the 1st Marine Division's equipment readiness rate at 96.3.¹⁷⁵ Finally, Lieutenant Colonel Kelly's 25 landing support Marines conducted helicopter support operations.^{176**}

General Support of the MEF

*Logistics support for the MEF continues at a high tempo. Emphasis was placed on providing CSS to units forward at all costs.*¹⁷⁷

Beginning in September and continuing into October, GSG-1 pushed hard to provide general support to a customer list consisting of I MEF, the U.S. Army, the British, the 4th MEB, and especially DSG-1. Colonel Hampton transferred personnel and equipment to DSG-1 and ensured that 77 percent of its requests were filled within 96 hours. GSG-1 shared the port with the U.S. Army and British Army and assisted the moves of both organizations to defensive positions. Colonel Hampton consolidated, improved, and extended supply, maintenance, medical, dental, engineer, landing support, and transportation services.¹⁷⁸

Motor Transport

From Jubayl, GSG-1's motor transport detachment hauled cargo, equipment, and passengers to the forward battle area and airfields, supported the British

*Additionally, CSSD-111 called for emergency helicopter services for the Army and allowed an Army military police platoon to operate from its camp. (Kelly comments).

**According to Col Kelly, CSSD-111's commander, "helicopter resupply was a real disappointment. Rarely did they support us, despite our asking." (Kelly comments)



Photo courtesy of Major Adrian W. Burke

A CH-53E Sea Stallion helicopter conducts helicopter support operations at Manifah Bay with CSSD-141.

Army and the U.S. Army, and transferred trucks and people to DSG-1. In total, Lieutenant Colonel Smith's detachment moved 40,594 passengers and hauled 61,384 tons of cargo in 150 convoys during the two-month period. GSG-1's trucks carried 4,638 pallets and 24 containers of ammunition to FASPs -1 and -2 and AM2 matting to the 3d MAW air bases. In the later part of October, the detachment's trucks hauled 60 pallets of cargo to the British 7th Armoured Brigade, which also used the motor pool to operate 20 heavy transports. In addition, the motor transport detachment carried water for the Army's 3d Armored Cavalry Regiment (3d ACR).¹⁷⁹ At the end of September, Smith sent the 3d Platoon, Company A, to CSSD-141 at Manifah Bay and Company B to CSSD-111 at Abu Hadriyah, but partially made up for his losses on 27 October, when 50 LVS trailers and 299 sixcon fuel and water modules arrived from Camp Pendleton.¹⁸⁰

Landing Support

The landing support detachment unloaded ships and aircraft and conducted HSTs. During September, GSG-1's Red Patchers helped unload the MV *Baugh*, the last ship of MPSRon-3; the maintenance and aviation/support ships (TAVBs) *Wright* and *Curtiss*, which carried the intermediate maintenance capability for the 3d MAW's aircraft; and the MV *Maersk Constellation*, which carried AM2 matting. In October, the landing support detachment shared the port with the U.S. and British Armies and unloaded 38,353 pallets of cargo, 276 containers, and 532 vehicles from seven different ships.* The arrival and departure air

* The seven ships were the USS *Dubuque* (RCT-4), MV *Greenridge*, (NMCB-4), MV *Cape Breton* (I MEF Ammunition), USS *Spartanburg County* (4th MEB), MV's *Alpha Challenger*, *Cape Borda*, and *Samsung Harbor* (I MEF sustainment).

groups at Jubayl Naval Air Station and Dhahran processed 351 flights carrying 11,481 tons of cargo and 8,553 passengers during September. The following month, Dhahran unloaded 555 vehicles and 184 pallets of cargo from 30 arriving aircraft. Lieutenant Colonel Beinhart used HSTs to resupply CSSD -111 and -141, trained with MAG-16's helicopters, transferred the air delivery platoon, and sent landing support specialists to DSG-1.¹⁸¹ At the end of September, Captain Peter B. McMurran replaced Lieutenant Colonel Beinhart as the commanding officer of the detachment.¹⁸²

Medical and Dental

The medical detachment worked from the Al Huwaylatt hospital, the port, and forward locations near the Kuwait border. During September and October, doctors and corpsmen treated 1,264 emergencies, snapped 2,586 X-Rays, filled 1,582 prescriptions, admitted 437 patients, and performed 65 surgical procedures. As part of I MEF's preventative medicine program, specialists tested the MEF's drinking water 304 times for biological impurities, performed 141 sanitation inspections, and conducted 172 vector control missions.* Medical personnel practiced disaster drills, helicopter medevac procedures, assisted the U.S. Navy to investigate a diarrhea outbreak caused by bad bottled water and contaminated lettuce, and hosted a class on managing chemical casualties presented by the U.S. Army Chemical Corps.¹⁸³ The medical detachment sent Company A to CSSD-111, Company B to CSSD-141, and during October, Company E to the Saudi Naval Base at Ras Al Mishab, located 45 kilometers south of the Saudi-Kuwaiti border. Company E supported RCT-3's cross-training with the Saudi King Abdul Aziz Brigade and replaced CSSD-141 as the closest logistics unit to the Kuwaiti border.** Company E joined forces with a Bangladeshi dressing station that served coalition forces screening the border and made contact with a Moroccan collecting and clearing company located 50 kilometers to the south at Ras Al-Safaniyah.¹⁸⁴

By the end of October, the dental detachment operated 11 clinics and treated 5,213 patients of which 31 percent were emergencies. Patients came from I MEF, the 4th MEB, the U.S. Army, Air Force, and Navy as well as from Great Britain, Saudi Arabia, and Bahrain.¹⁸⁵ To extend service to forward bases without clinics, the dental detachment loaded dental equipment on a 5-ton truck, nicknamed it "Drills on Wheels," and sent it to forward units. On 30 October, a dentist and a dental technician from GSG-1 joined Company E at Ras Al Mishab and extended service to Marines working in the area.¹⁸⁶

Supply

During September and October, GSG-1's supply detachment gained control of I MEF's supplies, issued equipment, and established a myriad of capabili-

*Vectors are organisms, like flies and mosquitoes, that carry and spread disease.

**I MEF's presence at Mishab began in September with visits by reconnaissance units and gradually increased in scope and size as I MEF expanded.

ties. The detachment issued equipment from 2,200 containers, warehoused 13,000 different kinds of repair parts, and established a maintenance float to swap functioning repair parts for broken, but repairable, items. The medical logistics section issued supplies to 48 units from its block of 800 line items and from its narcotic and controlled drug issue point. Ammunition company distributed munitions from 1,500 containers and the rations platoon warehoused 40,000 cases of MREs sent from the Marine supply depot at Albany, Georgia. The detachment's contracting officers purchased services and supplies for both the Marines and the U.S. Army.¹⁸⁷ On 17 October, the Marine Corps' automated supply support system (SASSY) became operational, which gave I MEF units the ability to account for and manage their equipment and supply requests. Additionally, SASSY gave the supply detachment the ability to requisition directly material from item managers in the United States without going through Camp Pendleton. A day later, the supply detachment released 1,427 parts, which were ordered in August and September, to the supported units. To manage and distribute material arriving in Saudi Arabia, a transportation management office was established in October. For items going in the reverse direction, the packing, preservation, and packaging section built shipping boxes and packed items, such as crashed helicopters, for transport to the United States.¹⁸⁸

Maintenance

Maintenance Detachment, which provided intermediate maintenance of ground equipment for I MEF, was established on 4 September. Intermediate maintenance consisted of repairing the entire item or component parts and returning it or them to either the owning unit or the supply system. In comparison, the owning unit conducted organizational maintenance which consisted of cleaning, servicing, inspecting, lubricating, adjusting, and completing minor repairs to equip-

One of the huge warehouses located in the Port of Al Jubayl was operated by the Supply Detachment, GSG-1.

Photo courtesy of LtGen James A. Brabham, Jr.





Photo courtesy of LtGen James A. Brabham, Jr.

An M60 tank is prepared with applique mounts for the placement of armor panels.

ment.¹⁸⁹ When the repair of an item exceeded the owning unit's capabilities, the item was sent to the maintenance battalion to be either fixed and returned or exchanged for a working item from the Quick Exchange Program. Lieutenant Colonel Leon S. Lusczynski organized the maintenance detachment into motor transportation, engineer, communications, ordnance, and general support maintenance companies.

After activation, the maintenance detachment focused on reducing the backlog of items requiring repair, modifying tanks, and supporting forward units. During September, the detachment completed 50 percent of the 2,879 equipment repair orders opened on I MEF equipment and during the following month increased the completion rate to 72 percent when SASSY came on line. Starting on 18 September, GSG-1's maintenance technicians, together with a civilian team from Albany, Georgia and CSSD-111 mechanics, began bolting applique armor panels to the hulls and turrets of M60A1 tanks in the field around Abu Hadriyah. When a high explosive antitank round (HEAT) struck a tank, the applique armor would explode and dissipate the chemical energy from the enemy round to protect the tank and its crew.¹⁹⁰ By the end of October, applique armor protected all the 1st Marine Division tanks. To support forward units, Lieutenant Colonel Lusczynski sent M88A1 tank and R-7 amphibious assault retrievers to CSSD-111 and dispatched contact teams to repair amphibious assault vehicle engines at CSSD-111 and refrigeration units at Manifah Bay and Abu Hadriyah.¹⁹¹

During October, Lieutenant Colonel Lusczynski ordered the maintenance detachment to recover all equipment abandoned during the first two months of the deployment and called this effort, "Operational Roundup." The detachment's recovery vehicles scoured the roads and compounds within a 75-mile radius of the



Photo courtesy of LtGen James A. Brabham, Jr.

An M60 tank with applique armor panels attached is now ready for battle.

port and recovered equipment that was either broken, lacked operators, not issued, or was unwanted cargo dumped by the unit which wanted the truck rather than the cargo. Luszczynski's Marines gathered, inventoried, and fixed the equipment at the port and created an operational readiness float (ORF).^{*} The maintenance detachment, which fixed broken items for both the maintenance float and the ORF, managed the ORF which was named the Quick Exchange Program (QEP) by Lieutenant Colonel Thomas A. Keene, the combat service support officer on General Brabham's staff. The 1st FSSG used the term "QEP" as opposed to the doctrinally prescribed and well-known acronym of "ORF," because a true ORF was an officially recognized entity by Headquarters Marine Corps and the QEP was an unofficial creation of 1st FSSG. Regardless of the name, the QEP became I MEF's equipment reserve in the Gulf region.^{192**}

Engineer Operations

Major Sweeney's engineer detachment worked with the Seabees, the division, and the wing engineers to reduce I MEF's massive construction requirements. Operating from a quarry near Jubayl Naval Air Facility, the GSG-1 engineers dug marl for the apron expansion project at the air facility. Working with the Seabees and MWSS-174 Marines at King Abdul Aziz Naval Air Station, GSG-1

^{*}An ORF is similar to a maintenance float operated by the supply detachment, in that a using unit exchanges a broken item for a functional one. The difference is that an ORF exchanges entire items, such as tanks, LAVs, TOWs, radios, and trucks while a maintenance float trades only component parts, like transmissions, circuit cards, and engines.

^{**}One of the criticisms often voiced against the 1st FSSG's organization in the Gulf was the use of non-doctrinal terms such as QEP, DSG, GSG, DSC, etc.



Photo courtesy of Col Thomas S. Woodson

This command post tent is held to ground by some of the 5,500 concrete tent anchors constructed by GSG-1's engineer detachment.

engineers built an ammunition storage point and dug fighting positions. For the 1st Marine Division, Sweeney's engineers constructed a mock Iraqi strongpoint for training, prepared a site for the new division's messhall, dug pits for artillery pieces, and excavated fighting holes for the 3d Battalion, 9th Marines.¹⁹³ The engineer attachment issued more than 5.2 million gallons of fuel, constructed 400 strongback tent frames, 5,500 concrete tent anchors, berms for assault amphibious fuel systems, and produced 7,800 gallons of water daily for the U.S. Army.¹⁹⁴

Headquarters and Support Group

The Headquarters and Support Group (H&SG) provided a variety of services to I MEF as well as coordinating security at the Port of Al Jubayl. Lieutenant Colonel Hayden extended military police patrols with the British to the city of Jubayl and tested the responsiveness of the Critical Facilities Operations Center to multiple threats to the port. On 20 September, the graves registration platoon led by Lieutenant Colonel John M. Cassady, Jr., processed its first fatality, a soldier from the 82d Airborne Division killed in a traffic accident. The graves registration platoon gave I MEF the capability to search, recover, and identify bodies, as well as collecting the victim's personal property. The processing chain started at the victim's unit which sent remains to collection and clearing sections where graves registrations personnel processed the body and personal property for shipment to the next-of-kin.¹⁹⁵

During October, the H&SG established the Interim Forward Automated Services Center (IFASC) which allowed I MEF to operate SASSY, the Marine Corps Integrated Maintenance Management System (MIMMS) used by maintenance personnel, and for the MEF's administrators and disbursers to access

Marine Corps personnel and pay systems. To improve service, Lieutenant Colonel Hayden established a Manpower Management Information Systems Office as the MEF's focal point for all unit diary transactions with the Marine Corps Finance Center, Kansas City, Missouri, and opened six branch disbursing offices to extend services in Saudi Arabia and Bahrain. During October, the post office processed 713 tons of mail which was collected and mailed twice daily; the legal service support section handled a small amount of courts martial, investigations, and payments for foreign claims; and the Marine Corps exchange opened nine outlet stores.¹⁹⁶

Marine Forces Afloat

*First, the short period available for loadout, from alert to sail, without a clearly defined mission, drove a load plan that we knew would have to be adjusted . . .*¹⁹⁷—MajGen Harry W. Jenkins, Jr., CG, 4th MEB

As I MEF rushed to establish defensive positions, the 4th MEB and 13th MEU arrived in the region and used September and October to refine their plan and properly load the ships carrying the 4th MEB.* On 7 September, the 13th MEU (SOC) arrived at the northern end of the Arabian Sea near the entrance to the Persian Gulf. Ten days later, all three transit groups carrying the 4th MEB reached the coast of Masirah Island in the Arabian Sea. The 4th MEB, commanded by Major General Harry W. Jenkins, Jr., a Californian who served as an infantry company commander during the Vietnam War, lacked a mission from NavCent as well as adequate means to command and control both amphibious entities.¹⁹⁸ To offset these problems, Jenkins developed 10 possible missions for 4th MEB and 13th MEU (SOC), which remained as an independent unit, but associated with the 4th MEB. The MEB's primary logistics problem was that the rapid embarkation of 4th MEB scattered equipment and supplies among the ships of the amphibious task force, especially the five Military Sealift Command (MSC) charters carrying the MEB's sustaining supplies. Consequently, the 4th MEB needed to repack its equipment and supplies.¹⁹⁹

On 9 October, Saudi Arabia granted the 4th MEB diplomatic clearance to dock at the port of Jubayl and reconfigure the MSC ships, which were inadequate for amphibious warfare. The five ships could not unload supplies without a port and were not combat loaded so that different types of supplies could be easily reached and rapidly issued. Finally, three of the ships were under foreign registry which prevented their entry into a war zone. General Jenkins solved these problems by obtaining the MV *Baugh* and MV *Bonnyman* from MPSRON-2 and by reloading and reconfiguring 4th MEB's follow on shipping at the Port of Jubayl.²⁰⁰

*See LtCol Ronald J. Brown, USMCR (Ret), *U.S. Marines in the Persian Gulf, 1990-1991: With Marine Forces Afloat in Desert Shield and Desert Storm* for a comprehensive history of the activities of 4th MEB, 5th MEB, and 13th MEU during the Persian Gulf War.



Photo courtesy of LtGen James A. Brabham, Jr.
Marines sort mail in the interior of the Headquarters & Service Group post office facility in Saudi Arabia. Mail, as in all wars, was an important morale builder.

General Jenkins assigned Lieutenant Colonel Robert C. Dickerson, Jr., the 4th MEB's assistant logistics officer, to lead the port operations group (POG) consisting of 397 Marines and sailors. The POG had the mission of reloading 4th MEB's sustaining supplies for combat, repairing equipment, and transferring material to I MEF. The group reached Jubayl on 13 October and began a partial offload of the USS *Spartanburg County*. Over the next seven weeks, the POG unloaded all five MSC ships; inventoried, repaired, and painted equipment; and reloaded the ships to support amphibious operations. The addition of the MV *Baugh* and MV *Bonnyman* gave the 4th MEB the ability to unload supplies and equipment in open water. Also, the POG transferred 6,083 short tons of ammunition, most of the MEB's construction material, communications gear, and morale and welfare materials to I MEF. The POG unloaded equipment for Battery B, 2d Light Antiair Missile Battalion and the 2d Remote Pilot Vehicle Company, which were units the 4th MEB transferred to I MEF.²⁰¹

Three Months after the Invasion

*In stabilizing and refining the force, the logistics focus remained on building sustainment, filling the throughput pipeline, and preparation for future operations.*²⁰²

September started with a sense of urgency as I MEF rushed to strengthen defenses and October ended with the Marines and sailors of I MEF contemplating rumors about Central Command's plan to rotate units in order to maintain a long-term defense.* At the end of October, the size of I MEF increased to 31,391

*Central Command, faced with the possibility of a long-term presence in the Persian Gulf, began looking at the possibility of rotating units to-and-from theater in either 8- or 12-month cycles. (I MEF ComdC Oct90, Sec 2).

Marines and sailors of which 8,511 belonged to the 1st FSSG, COMCBPAC Foxtrot Delta, and the three MWSSs.²⁰³ At the end of October, thoughts concerning future operations alternated between the possibility of a long-term presence in the Persian Gulf and the potential of a quick end to the crises by taking the war to Saddam Hussein. In early November, President Bush ended speculation about the future by opting for the latter course of action.

Table: I MEF logistics units and personnel strengths at the end of October 1990²⁰⁴

Logistics Unit	Number of Personnel
1st FSSG	4,680
COMCBPAC Foxtrot Delta	2,397
MWSS-174	498
MWSS-373	477
MWSS-374	459

Switching to the Offense: November and December 1990

The Situation

*On 8 November, President Bush announced that another 200,000 U.S. troops were on their way to the Gulf, and made their mission unmistakable: to ensure that the coalition has an adequate offensive military option.*²⁰⁵

The President's 8 November decision to reinforce Central Command gave General Schwarzkopf sufficient military strength to begin the preparations for the ejection of Iraq's 435,000 troops from Kuwait. Central Command received the Army's VII Corps and 1st Infantry Division; 400 Air Force aircraft; three Navy carrier battle groups; the 2d Marine Division; 164 Marine Corps aircraft; General Krulak's 2d FSSG from Camp Lejeune, North Carolina; MPSRon-1; and the 5th MEB. General Schwarzkopf planned a four-phase offensive of which the first three stages consisted of air campaigns against strategic targets in Iraq, enemy air power in Kuwait, and Iraqi ground forces in both countries. After completing the first three phases, Central Command intended to use ground forces to expel the Iraqis from Kuwait and to destroy the *Republican Guard*. Two U.S. Army corps would attack west of Kuwait and north into Iraq, wheel east, and destroy Iraqi forces south of the Euphrates River. Schwarzkopf ordered the Marines and coalition forces to launch supporting attacks into Kuwait to fix the Iraqi forces in place. The Coalition forces consisted of the Joint Force's

Command North (JFC-N), which would assault into the western third of Kuwait, and the Joint Force's Command East (JFC-E), which would attack along the coast towards Kuwait City. I MEF would launch its attack into central Kuwait between the coalition forces.²⁰⁶

The 3d MAW would participate in Central Command's three air offensive phases and then switch to supporting exclusively I MEF's ground attack. Reinforced with MAG-26, a helicopter group from Marine Corps Air Station Cherry Point, North Carolina, and 16 active duty and Reserve squadrons, General Moore, the 3d MAW commander, planned to push as far forward as possible. To provide helicopter support to the ground forces attacking Kuwait, the 3d MAW intended to move MAG-26 to Mishab and MAG-16 from Jubayl Naval Air Facility to Tanajib, which was located 30 kilometers south of Mishab. After the helicopters departed, General Moore aimed to base six KC-130 tankers, two squadrons of F-18 Hornets, and his headquarters at Jubayl Naval Air Facility. The expanded wing required additional combat service support. The general, tried and failed to obtain MWSS-274 from the 4th MEB, but did acquire the services of two MWSSs from II MEF.²⁰⁷ To command and control the wing's five MWSSs, General Moore brought forward the Marine Wing Support Group 37 (MWSG-37) headquarters from MCAS El Toro, California.²⁰⁸

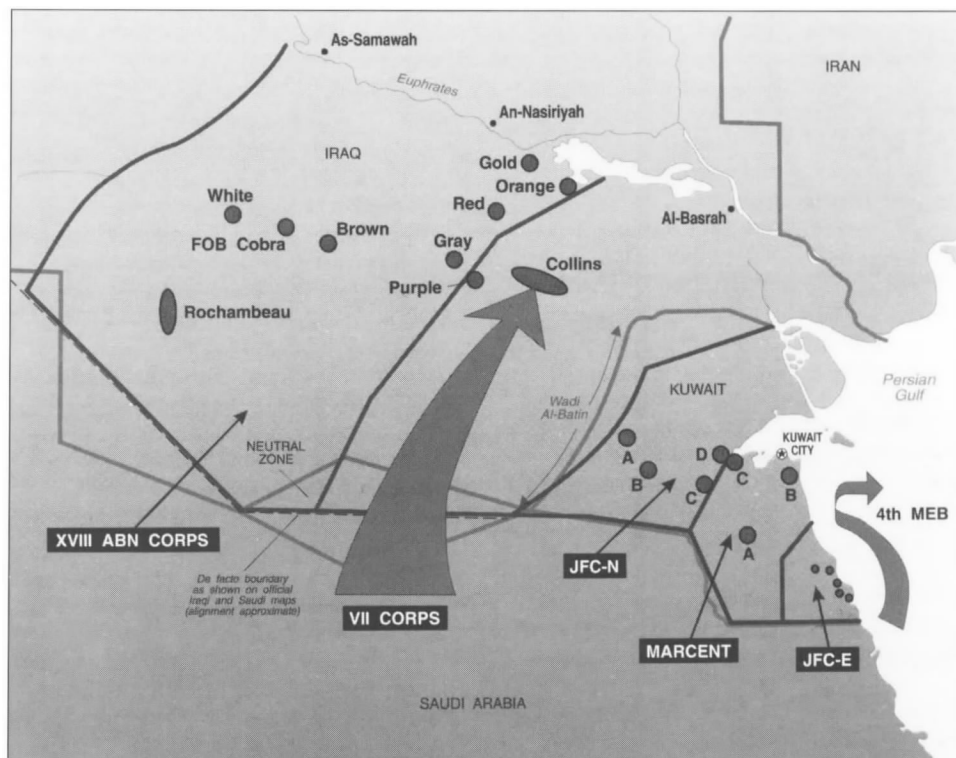
During Phase Four, General Boomer intended to fix and destroy Iraqi operational reserves in Kuwait, assist with the attack on Kuwait City, and, if ordered, continue the attack to the north.²⁰⁹ To overcome Iraq's three-to-one superiority of tanks and artillery, General Schwarzkopf initially assigned the British 1st Armoured Division, commanded by Major General Rupert Smith to I MEF. But in early December, he replaced the British division with the U.S. Army's lighter 1st Brigade, 2d Armored Division, known as the Tiger Brigade.* General Boomer assigned the Tiger Brigade to the 2d Marine Division, commanded by Major General William M. Keys, a veteran infantry officer with two combat tours in Vietnam.²¹⁰ The MEF commander planned to penetrate Iraq's defenses in Kuwait initially with the 1st Marine Division, followed closely by the 2d Marine Division, and then link up with the 4th and 5th MEBs which would conduct amphibious landings further north.²¹¹ The 1st FSSG, reinforced with the 2d FSSG, would provide combat service support to the wing and both divisions during the attack.

How to Merge the 1st and 2d FSSGs?

*The most important thing that transpired, was how did you get these two FSSGs to fight as one?*²¹²

Before the President's decision to reinforce the American forces,

*According to *The Generals' War*, pp. 166-169, British concerns for national prestige and fear of casualties forced Schwarzkopf to reassign the British to VII Corps' main attack. Schwarzkopf directed the ArCent commander, LtGen John J. Yeosock, to give the Marines an equal substitute, which in Yeosock's estimation was a U.S. Army brigade.



Ground Offensive Campaign Concept of Operations

Brigadier General Krulak at Camp Lejeune, North Carolina, had become certain that the 2d FSSG should deploy to Southwest Asia with its headquarters battalion. During October and early November, while preparing to replace the 1st FSSG, the 2d FSSG commander and staff studied General Brabham's organization in the theater and conducted a series of exercises that simulated the long distances faced in the Gulf region.* The experience obtained in these exercises and telephone discussions with General Brabham convinced General Krulak all the more that he needed his headquarters battalion to control combat service support operations when the 2d FSSG replaced the 1st FSSG in Southwest Asia.

In early November, Lieutenant General Robert J. Winglass, the Deputy Chief of Staff for Installations and Logistics at Headquarters Marine Corps, visited General Krulak and relayed specific instructions from General Alfred M. Gray, the Marine Corps Commandant, that the 2d FSSG when it deployed would not take additional command and control assets.²¹³ Winglass explained that General Schwarzkopf had placed a ceiling on the number of personnel in the region and that I MEF could not exceed its limit. Krulak and his chief of staff, Colonel John A. Woodhead III, disagreed with these limitations and argued the need for the headquarters battalion to strengthen command and control capabilities, citing data

*The assessment culminated in a command post exercise that located CSSDs at Fort Pickett, Virginia, and the main body of the FSSG at distant Camp Lejeune, North Carolina.

from the recently completed exercises.* After departing Camp Lejeune, Winglass forwarded the 2d FSSG's concerns to General Gray who remained adamant that the 2d FSSG make a one-for-one replacement with 1st FSSG in the Gulf.** According to the 2d FSSG commander, General Gray's decision "put us in a bind." Krulak, nevertheless, ordered Colonel Woodhead to plan for the replacement of 1st FSSG without his headquarters battalion and without increasing the number of FSSG personnel in I MEF. On 5 November, the FSSG commander sent General Boomer a letter which stated 2d FSSG's intent to "mirror-image" the 1st FSSG organization, and detailed the 2d FSSG's predeployment preparations, and requested a face-to-face meeting of the commanders and staffs of both FSSGs to plan the turnover.²¹⁴

With the decision to reinforce the forces in the Gulf region, Central Command's restriction on the number of personnel disappeared. Responding to the change in circumstances, Colonel Woodhead drafted a message that outlined options for integrating the 1st and 2d FSSGs.²¹⁵ In the first course of action, the two FSSGs would form one giant-sized unit.*** The second option designated zones of action with each FSSG supporting the commands operating in its particular sector. According to the third concept, the Marine command would consolidate the 4th and 5th BSSGs afloat under a single FSSG headquarters. The fourth alternative, which General Krulak recommended, assigned the FSSGs different missions. One FSSG would provide direct support to I MEF's ground combat element and the other FSSG would furnish general support to the MEF and reinforce the direct support FSSG. After consulting with General Brabham by telephone, Krulak sent Woodhead's message to Lieutenant General Carl E. Mundy, Jr., the commander of both II MEF and the Fleet Marine Force Atlantic, and an information copy to General Brabham in Saudi Arabia.²¹⁶ General Mundy forwarded the message to General Gray for his information and concurrence.²¹⁷

In Saudi Arabia, General Brabham agreed with General Krulak's initiative to use the two FSSG headquarters in general and direct support roles. The 1st FSSG was already organized along general and direct support lines, but lacked the command and control capabilities to support the offensive. Moreover, the offensive gave Brabham the additional task of directly supporting two divisions fighting a distant battle as well as providing general support to a reinforced MEF, conducting rear area security, and running the port used by both the U.S. and British armies. General Brabham expressed his views in a phone call to Lieutenant General Winglass and during a telephone conversation with General Krulak suggested that the 2d FSSG, "leap frog right over mine and become a direct support command."²¹⁸

*Gen Krulak described Colonel Woodhead as "an unsung hero and the finest operational logistician in the Marine Corps at that time." (Krulak comments)

**Krulak comments.

***In the Vietnam War, the Force Logistics Command, which numbered about 3,000, was activated at Da Nang, South Vietnam, on 15 March 1966. It consisted of the 1st and 3d Service Battalions and the 3d Force Service Regiment (Jack Shulimson, *U.S. Marines in Vietnam: An Expanding War, 1966* [HQMC: Washington, D.C., 1982] pp. 277-88.)



Photo from Quilter, *With 1 MEF*, p. 32

Col John A. Woodhead III, Chief of Staff, 2d FSSG and the DSC, at left, is shown with BGen Charles C. Krulak, Commanding General of the 2d FSSG and the Direct Support Command.

Around Thanksgiving 1990, General Krulak prepared for a four-day visit to Saudi Arabia to determine, with Generals Boomer and Brabham, the command relationship between the two logistic commands. Krulak, with a small staff and without an answer from the Commandant on his command relationship message, departed Camp Lejeune. While awaiting a connecting flight at Andrews Air Force Base near Washington, D.C., General Krulak learned that Generals Gray and Winglass were in the VIP lounge and wanted to see him. On his arrival at the lounge, the Commandant playfully and lightly punched General Krulak a couple of times on the arm and then settled down to business. Krulak told Gray about using the two FSSGs in direct and general support roles and added that he and

General Brabham intended to propose this concept to General Boomer. Thirty minutes later, Krulak departed Washington with the Commandant's blessing on his recommendation. After arriving in Saudi Arabia, Generals Brabham and Krulak briefed General Boomer, who agreed with the plan, but wanted only one FSSG. Boomer declared that instead of assigning the direct support role to the 2d FSSG, just call the 2d FSSG the direct support command and put it under the umbrella of the 1st FSSG which would execute the general support mission.²¹⁹

After the I MEF commander had decided upon the command relationship, it was the responsibility of General Brabham, who was senior to General Krulak and in charge of the single FSSG, to decide whether he or General Krulak would lead the Direct Support Command (DSC). General Brabham selected the general support mission which left the DSC in the hands of General Krulak.²²⁰ Brabham's decision maximized the experience of both general officers. Brabham's previous tour at Central Command and his experiences since August gave him a clear understanding of the logistics situation in the Gulf and strong working relationships with Central Command, the U.S. Army, and the Saudis.²²¹ On the other hand, Krulak was a career infantry officer and the former assistant division commander of the 2d Marine Division, which was one of the two major units that the DSC would sustain.^{222*} He now would be responsible for supporting a movable 40-by-50-mile battle zone. According to the concept drafted by Colonel Woodhead, the 2d FSSG's chief of staff, the Direct Support Command would receive most of the tactical motor transport, engineers, and landing support assets from both FSSGs, as well as DSG-1. Brabham would get most of the supply, maintenance, and service capabilities, run the port, and push supplies to Krulak's DSC.^{223**}

The 1st FSSG Restructures and Refocuses

*...The key to being able to do what we did in the Gulf is . . . flexibility . . .*²²⁴

The Establishment of GSG-2

To push supplies forward to the battle area, without the benefit of tactical motor transport assets, required flexibility and creativity. Accordingly, General Brabham ordered his procurement officers to rent trucks and drivers from the

*Gen Krulak commented that "In his [General Brabham's] heart, he wanted to be up front with the divisions," and that "it was a real smart move by Jim Brabham, who knew what was going to be more fun, but like most Marines, made the right call that put him in the right position with his expertise and me, with my infantry experience, up front with the divisions." (Krulak comments)

**Col Woodhead laid out the concept for direct and general support FSSGs in a paper called "CSS Command Relationships in SWA," which is reprinted in Appendix A. This concept paper also served as the basis for Gen Krulak's November message to the Commandant, which described the command options for integrating the 1st and 2d FSSGs.



Photo courtesy of LtGen James A. Brabham, Jr.

Two civilian Mercedes Benz trucks were driven by "Saudi Motors." Gen Brabham relied on his contracted fleet of trucks to support I MEF's offensive into Kuwait.

local economy. The FSSG contractors competed with the U.S., British, and Saudi armies to hire a motley assortment of third world drivers and vehicles. To make up for the shortcomings of the available assistance, General Brabham organized the drivers and their vehicles into a "line-haul" battalion and hoped that a Marine Corps-like organization would instill a sense of pride, dignity, and belonging, which were considerations not normally rendered to the drivers by their regular employers. To appeal to the more worldly needs of the vehicle operators, General Brabham authorized one meal per day, Marine Corps exchange privileges, and the opportunity of watching professional wrestling videos during off-hours. Brabham placed the 114 commercial tractor trailers and 56 bus drivers under the command of Lieutenant Colonel Charlie F. Smith, GSG-1's motor transport detachment commander. An unidentified wit dubbed the new organization "Brabham's Bedouins," but the unit was best known as "Saudi Motors."²²⁵ On 12 November, Saudi Motors performed its first resupply by running convoys to CSSDs -111, -132, and -141.²²⁶

Opening a port near the Kuwaiti border was another creative way of pushing supplies to General Krulak's DSC. Almost from the beginning of Desert Shield, I MEF focused its attention on the port at Ras Al Mishab. During September and October, teams from the Navy support element at Jubayl surveyed the port's facilities and capabilities and on 7 November, Brigadier Generals Brabham and Thomas V. Draude, the assistant 1st Marine Division commander, visited the port. Following this trip, Brabham ordered Colonel Hampton, the commanding officer of GSG-1, to survey Mishab and to plan for an organization that made best use of the port, its air strip, and location along the coastal road to



Photo courtesy of LtGen James A. Brabham, Jr.

An aerial view shows the motor transport compound at Ras Al Mishab. Gen Brabham established GSG-2 to open a port near the battlefield and to stock 10 days of supplies to support the ground attack into Kuwait.

Kuwait. On 30 November, Hampton forwarded a rough estimate of the equipment and personnel, and a blueprint of the combat service support area needed to develop Mishab. The next day General Brabham selected Colonel Hampton to command GSG-2 at Ras Al Mishab.

Until 11 December, Colonel Hampton and a small staff waited for I MEF to approve the establishment of GSG-2. Upon this approval, Hampton relocated his staff at Mishab, and absorbed GSG-1's medical and dental units. GSG-2's mission was to stock 10 days of water, food, fuel, oils and lubricants, ammunition, and medical supplies for MAG-26 and the 1st and 2d Marine Divisions, and eventually to push supplies to General Krulak's Direct Support Command. On the 19th, Colonel Hampton took charge of the newly arrived 7th Engineer Support Battalion and the 7th Motor Transport Battalion.²²⁷ The GSG-2 commander used his engineers to establish two amphibious assault fuel systems with a storage capacity of 1,200,000 gallons near the beach and airfield and four additional systems next to the highway. The six systems would eventually give GSG-2 a fuel storage capacity of 3,200,000 gallons.²²⁸ The 7th Motor Transport Battalion using M970 refuellers and the U.S. Army, operating from forward operating base (FOB) Bastogne, hauled fuel. The engineers set up ROWPUs and produced potable water from the Persian Gulf. Captain Johnson, the naval construction task force commander, sent his Seabees to build FASP-3 on 19 December.²²⁹ By the end of the month, Colonel Hampton commanded 1,226 Marines and sailors, who busily prepared to support forward units.²³⁰

DSG-1, November-December 1990

After nearly three months in Saudi Arabia, it was clear to Colonel Powell, the DSG-1 commander, that supporting the division was different than sustaining the wing. CSSDs moved with the division and directly influenced the ground scheme of maneuver. In the defense, CSSD-141 supported combat elements in the division's security zone while CSSD-111 sustained forces in the battle area. In comparison, static CSSDs with the 3d MAW performed housekeeping chores which did not directly influence aviation tactics. The transition to the offense would make DSG-1 mobile and more intimately involved in the planning and execution of the division's tactical plans. Accordingly, Powell transferred CSSD-131 to GSG-1 on 5 November and because of its HST and air delivery capabilities held on to CSSD-132 until the end of the month. The transfer of aviation CSSDs to GSG-1, allowed DSG-1 to concentrate on its only customer—the 1st Marine Division.

On 11 November, Colonel Powell had moved his headquarters from the port to a position near the 1st Marine Division command post at Abu Hadriyah.²³¹ This move allowed him to interact closely with General Myatt, the division staff, and his own commanders. General Brabham encouraged the relocation since it allowed Powell to voice General Myatt's logistic needs and problems to the 1st FSSG and, in turn, express General Brabham's capabilities and concerns to the division.²³² The DSG-1 commander attended division meetings and developed working relationships with the commanding general and his staff. Myatt believed that the division's main offensive limitation was logistics and ordered that a logistical exercise called LOGEX 1-91 be held between 12-17 November.²³³ During the exercise, the division, the DSG, and GSG-1 worked through an offensive scenario to determine the amount of supplies needed.²³⁴ As a result of the LOGEX, the 1st Marine Division expressed its supply requirements in daily amounts of ammunition, fuel, food, and water.

After the LOGEX, Colonel Powell convened a reorganization study group to restructure DSG-1 for the offense. The reorganization team studied the division's scheme of maneuver, converted supply requirements to ton-miles, and used driver-to-vehicle ratios and operating-hours to determine new tables of equipment and organization. The study group recommended the activation of two mobile CSSDs (MCSSDs) to move on the battle field with and sustain RCT-7 (Task Force Ripper) and RCT-1 (later named Task Force Papa Bear), which was scheduled to arrive from Camp Pendleton in December. Because of the lack of trucks, each MCSSD would be small, with the ability to move one day of water, fuel, and ammunition up to 65 kilometers from a fixed support area. The team recommended the activation of a general support CSSD to operate a fixed support area and to push supplies to the MCSSDs and ammunition to the artillerymen of the 11th Marines.²³⁵ The general support CSSD would provide supply point distribution to the remaining units of the division, to include RCT-3 (Task Force Taro), which remained as the division's helicopter-borne reserve force. Since the MCSSDs lacked maintenance and supply capabilities, the general support CSSD



Photo courtesy of Maj Adrian W. Burke

CSSD-141 Marines learn to wear their gas masks for as long as three hours a day while working and occasionally playing chess on a home-made set.

would repair equipment either by sending contact teams to forward locations or by transporting the broken item to the fixed support area.²³⁶ The DSG commander would control and coordinate the three subordinate CSSDs from a separate headquarters. Colonel Powell forwarded the new structure plan to the 1st FSSG and, when the 2d FSSG arrived in December, to his new boss, General Krulak.

Not waiting until the DSG was reorganized, CSSD-141 and -111 intensified training for offensive operations. For example, Lieutenant Colonel Kelly, the CSSD-111 commander, believed that during a rapidly moving assault the CSSD would have to fight its way in to deliver supplies and maintain the momentum of the attack. Accordingly, Captain Dennis P. Muller, the CSSD's security officer, trained each Marine and sailor to fire the .50-caliber and M60 machine guns, the M-19 grenade launcher, LAAW and AT-4 hand-held anti-tank weapons, and the M16 rifle and 9mm pistol. Everyone learned to drive 5-ton trucks and HMMWV's, and to call for artillery fire and close air support. Lieutenant Colonel Kelly ensured that all of his "Log Dogs" could fight as well as support. The lack of training ammunition, ring mounts for .50-caliber machine guns and M19 grenade launchers, TOW HMMWVs, global prepositioning systems (GPS), position locating and reporting systems (PLRS), and night vision devices, however, frustrated CSSD-111's training program and remained a primary concern together with the possibility of chemical and biological warfare.²³⁷

During November, CSSDs-111 and -141 continued to prepare and refine their ability to work in a chemical and biological infected environment. For example, Captain Burke trained his CSSD-141 Marines to work in their gas masks up to three hours per day. After achieving this goal, Burke reduced gas mask time to one hour per day to conserve filters which often clogged from sand

and sweat. In addition, the CSSD commander set up a chemical "hotline" for decontamination and practiced its execution with division units. A hotline consisted of personnel, equipment, and casualty triage stations that could move to within two kilometers of a chemical weapons impact zone. A contaminated unit would move from a "hot" staging area through the three decontamination stations, and exit, after cleaning, to a "cold" staging zone ready to continue with the battle.^{238*}

The Seabees Prepare for Reinforcements and the Offensive

Priority was to provide living space for the II MEF troops who began arriving in December.²³⁹

During early November, Captain Johnson, the Seabee commander, analyzed I MEF's future construction requirements and planned for the arrival of reinforcements. The Seabees estimated that the level of preparations for the assault equaled the workload expended in setting up I MEF's defenses. Accordingly, Johnson calculated that four Seabee battalions were sufficient to accomplish his emerging missions, but hedged his bet by requesting a fifth battalion set of equipment and on-call reinforcements from NMCB-1 in Rota, Spain, to cover the unexpected. Captain Johnson planned to rotate two of his battalions and a portion of his staff to maintain the Navy's overseas deployment schedule. NMCB-24, a Reserve battalion, and NMCB-74, based in Gulfport, Mississippi, would replace NMCB-4 and -7 which would complete their seven-month overseas deployment in December.

With the plan for the ground offensive completed, the Seabees focused the efforts of their four battalions on finishing existing projects and on building camps for reinforcements. On 14 November, the Seabees finished FASP-2 near the Cement Factory Ridge and participated in an exercise called Imminent Thunder. On the 19th, NMCB-40 completed the 1st Marine Division mess hall at Abu Hadriyah just in time to host President Bush for Thanksgiving dinner.** On the 25th, NMCB-5 finished the second parking apron at Jubayl Naval Air Facility, leaving only the third parking area uncompleted. On the same day elements from all four naval construction battalions began building a new tent camp for 15,000 occupants near Camp 15 in the Industrial City. An unidentified humorist nicknamed the camp "Wally's World," supposedly in reference to a fictitious amusement park in the comedy film "Summer Vacation," but in reality, a play on General Boomer's first name, "Walter." The six-sectioned camp covered 300 acres, consisted of 1,740 concrete slabs, 108 strongback tent frames, 24 mess hall buildings, 24 shower facilities, a sewer system, and 13 miles of road. Water and electricity came from the local Saudi systems.²⁴⁰

During December, the Seabees rotated units, completed more projects,

* Additionally, CSSD-111 developed a complementary NBC defensive plan with the 11th Marines and extensively trained with the artillery regiment. (Kelly comments)

**The messhall was collocated with CSSD-111 at Abu Hadriyah. (Kelly comments)

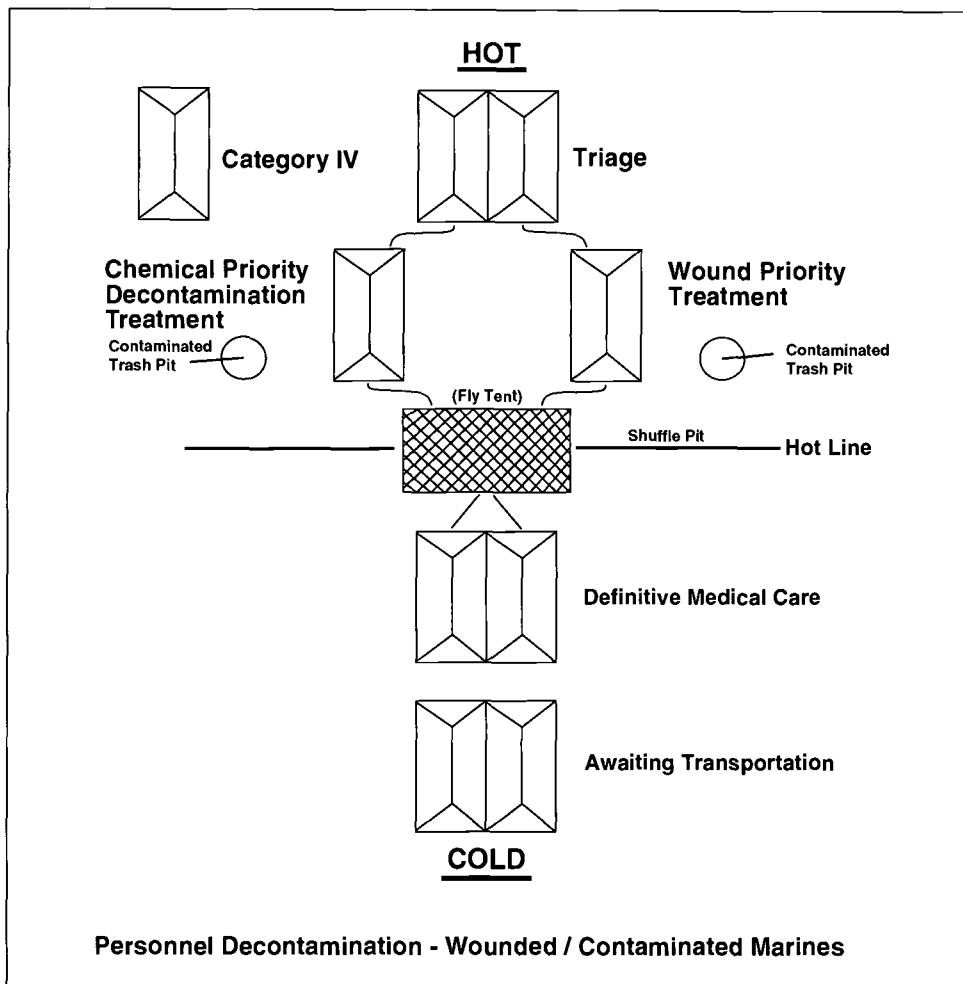


Diagram courtesy of Maj Adrian W. Burke

Diagram depicts CSSD-141's chemical hot line. Exposed units would enter at the hot end of the line and exit through the cold end after decontamination

and prepared for reinforcements. On 4 December, Commander Patrick Fogarty's NMCB-74 arrived at Shaikh Isa and replaced NMCB-7 which, before leaving Bahrain, finished MAG-11's ammunition supply point. Over the next two weeks, Commander James McGarrah's NMCB-24 replaced NMCB-4 and Captain Johnson received 24 additional staff personnel, which allowed him to redesignate the Seabee task force as the 3d Naval Construction Regiment (3d NCR).²⁴¹ To help with I MEF's construction burdens, Johnson called forward 200 Seabees from NMCB-1 in Rota, Spain, who arrived by mid-month.* On the 18th, NMCB-74 moved to Mishab and started building FASP-3, but left behind a detachment at Shaikh Isa to complete the apron expansion program started by NMCB-7. On the

* The additional personnel from NMCB-5, NMCB-24 reaching its wartime strength, the regimental augmentees arriving from the Naval Construction Force Support Unit, and an Underwater Construction Team increased the personnel strength of the 3d NCR to 2,800 by February 1991. (Johnson comments)

23d, NMCB-40 moved to Manifah Bay and assisted the 1st Marine Division engineers build a new support area and, a week later, started building firing ranges for the 2d Marine Division. On Christmas eve, NMCB-24 initiated site preparation for the second fleet hospital in the Jubayl area.²⁴²

Reinforcements

*Throughout December, the focus of the I MEF effort was planning and preparation for offensive operations as directed by USCINCENT including the reception and training of reinforcements . . .*²⁴³

On the other side of the world in southern California, the 5th MEB, commanded by Brigadier General Peter J. Rowe, a veteran of the Hue City and Khe Sanh campaigns during the Vietnam War, prepared to deploy to the Gulf.²⁴⁴ Lieutenant Colonel Robert E. Lupton commanded the 37 officers and 576 enlisted Marines and sailors of BSSG-5 which supported MAG-50 and Regimental Landing Team 5. Several months earlier, Lieutenant Colonel Lupton had quickly formed a BSSG to deploy with the 5th MEB to the Gulf using MSSG-11 as a nucleus and personnel and equipment from the 1st FSSG. After a few false starts and a reversion to a small planning headquarters, the 5th BSSG received 800 Reservists of whom 300 were engineers and military policemen, once the President made his decision to reinforce U.S. forces in the Gulf. Lupton again redesignated MSSG-11 as BSSG-5, absorbed the Reservists into the organization, and, on 1 December, departed for the Gulf. The 13 ships of Amphibious Group 3 and three MSC ships carried the 5th MEB and its follow-on supplies. After a brief stop in Hawaii to pick up additional personnel and equipment, Amphibious Group 3 steamed to the Philippines where the 5th MEB ended the year by conducting an amphibious exercise.²⁴⁵

Table: Amphibious Group 3 and follow-on shipping.²⁴⁶

USS <i>Tarawa</i> (LHA-1)	USS <i>Denver</i> (LPD-9)	USS <i>German- town</i> (LSD-42)	USS <i>Mobile</i> (LKA-115)
USS <i>Tripoli</i> (LPH-10)	USS <i>Juneau</i> LPD-10)	USS <i>Peoria</i> (LST-1183)	SS <i>Flickertail State</i>
USS <i>New Orleans</i> (LPH-10)	USS <i>Anchorage</i> (LSD-36)	USS <i>Barbour County</i> (LST- 1195)	MV <i>Neptune Iolite</i>
USS <i>Vancouver</i> (LPD-2)	USS <i>Mount Vernon</i> (LSD- 39)	USS <i>Fredrick</i> (LST-1184)	MV <i>Cape Girardeau</i>

In early December, General Myatt moved the 1st Marine Division north to make room for the arrival of the 2d Marine Division. The 1st Marine Division command post deployed 16 kilometers from its old location at Abu Hadriyah to a point 10 kilometers south of Manifah Bay along a desert road that connected Abu Hadriyah with Manifah Bay. On the 6th, division engineers began construction of a new division support area at Manifah Bay. The engineers disassembled strong-back tent frames at Ras Al Ghar and reassembled them at the new location. By mid-December, the 1st Marine Division transferred Camps 3, 5, and 15 to the arriving 2d Marine Division.²⁴⁷

On 8 December, 499 members of II MEF's Surveillance, Liaison, and Reconnaissance Party arrived by air, moved to the port of Jubayl, and prepared to unload the four ships of MPSRon-1, which were steaming towards Jubayl from the East Coast of the United States. Three days later, the air flow of reinforcements, mostly from the East Coast, but some from the West Coast, began bringing an average 945 Marines and sailors and 222 short tons of cargo every day for the remainder of the month. On the 13th, MPSRon-1 reached Jubayl, where the 6th MEB spent the next 10 days unloading the MVs *Kocak*, *Obregon*, *Pless*, and *Bobo*. BSSG-6, the combat service support element of the 6th MEB, sent the 2d FSSG's equipment to Lieutenant Colonel James W. Head, who used his MSSG-22 staff of 15 Marines to account for and sign over every piece of equipment to responsible officers.^{248*} By the end of the month, the size of I MEF increased by 58 percent. The 2d Marine Division added 11,000 Marines and sailors to I MEF, while the 1st FSSG almost doubled in size with the addition of the 2d FSSG. The 3d MAW operated 80 more aircraft.²⁴⁹

Arriving with II MEF's Surveillance, Liaison, and Reconnaissance Party was a small group of Marines and sailors from MWSS-273 at MCAS Beaufort, South Carolina, who were the first MWSS reinforcement to arrive in Saudi Arabia. Lieutenant Colonel William L. Riznychok commanded MWSS-273, whose main body reached the Persian Gulf in mid-December, picked-up equipment from MPSRon-1, and started moving to Ras Al Mishab the day before Christmas.²⁵⁰ Completing the move on the 30th, Lieutenant Colonel Riznychok commanded 706 Marines and sailors who prepared Mishab for the arrival of MAG-26.²⁵¹ Meanwhile, Colonel Robert W. Coop, the former 3d MAW logistic officer, took charge of MWSG-37 which, on 18 December, arrived from California. Coop, therefore, commanded all of the Wing MWSSs and became the camp commandant for King Abdul Aziz Naval Air Station.^{**} On the day after Christmas, MWSG-37 moved equipment for a fifth and final MWSS from MPSRon-1 to King Abdul Aziz.²⁵² Near the end of the month, 159 personnel

*MSSG-22 was one of three permanent MSSGs in the 2d FSSG.

**Col Coop selected King Abdul Aziz Naval Air Station for the MWSG-37 headquarters because of its proximity to the port of Jubayl and to the air bases supported by his squadrons. Because of the location, MWSG-37 retrieved equipment from MPSRon 1 without the problems experienced in August. In addition, MWSG-37 benefitted from the extensive maintenance and supply capabilities resident with GSG-1 at the port. (Coop comments)



Photo courtesy of Col Thomas S. Woodson

Marines from II MEF arrive by air at Jubayl Naval Air Facility as part of the large U.S. buildup in December 1990. These reinforcements gave I MEF the capability of ejecting the Iraqis from Kuwait.

from MWSS-271 located at Marine Corps Air Station Cherry Point, North Carolina, arrived at King Abdul Aziz Naval Air Station and claimed the equipment from Colonel Coop's Marines.²⁵³

Arriving with the Marines and sailors of the 2d FSSG were a significant number of Reserve logisticians. From October into December, the Marine Corps had activated Reservists from the 4th FSSG to fill critical shortages in the 2d FSSG caused by BSSG-4's hasty departure with the 4th MEB.* For example, on 6 December, Reserve bulk fuel specialists from Bakersfield, California, and Tucson, Arizona, and electricians and water supply technicians from Gary, Indiana, arrived at Camp Lejeune. During the next two days, the 8th Engineer Support Battalion, 2d FSSG, quickly merged the 215 Reservists from the 6th Engineer Support Battalion, 4th FSSG into its ranks and on 9 December, began sending them to Saudi Arabia. Unlike the active duty Marines, the Reserve engineers departed without any predeployment training.²⁵⁴

GSG-1, under Colonel Paul A. Pankey, a 36-year veteran of the Marine Corps who had assumed command on 7 December, operated a halfway house for

*As described earlier, 2d FSSG sent 1,464 Marines and sailors to BSSG-4, which was the combat service support element of the 4th MEB. The 4th MEB remained on board amphibious ships under the operational control of the Navy and not I MEF during Desert Shield and Desert Storm.

reinforcing FSSG units.^{255*} Newly arrived battalions from the 2d FSSG and the headquarters battalion from the 1st FSSG joined GSG-1, collected equipment, and either stayed in GSG-1 or were assigned to either General Krulak's DSC or Colonel Hampton's GSG-2. Colonel Pankey paired old and new units of the same functional variety together to facilitate acclimation to Saudi Arabia. For example, Lieutenant Colonel Charlie F. Smith, the commander of GSG-1's motor transport detachment, met Lieutenant Colonel Thomas S. Woodson's 8th Motor Transport Battalion at the port and transported the new arrivals to the GSG-1 motor pool where they were housed, briefed, and merged into operations. General Krulak brought every battalion from the 2d FSSG, except the dental battalion, while General Brabham brought forward only four of the battalion headquarters from Camp Pendleton.²⁵⁶ By mid-December, Colonel Pankey was temporarily in charge of nine battalions from the 1st and 2d FSSGs, three detachments, and both the operations and defense of the port of Jubayl.²⁵⁷

Establishing the Direct Support Command

*Once we got there, we established ourselves as a Direct Support Command.*²⁵⁸

After General Krulak arrived on 13 December, General Boomer ordered him to find a location in northern Saudi Arabia to support the I MEF forthcoming offensive.²⁵⁹ Krulak placed Lieutenant Colonel Charles O. Skipper, the commanding officer of the 8th Engineer Support Battalion and a graduate of the U.S. Army's Engineer Officer Advance Course with a master's degree in engineering from the University of South Carolina, in charge of developing the plans for the DSC's support area. On the 17th, Krulak flew with a group of officers to an area called Qaraah located 100 kilometers west of the port of Mishab and near the Kuwaiti border. Captain Jonathan P. Hull, the commanding officer of Company C, 8th Engineer Support Battalion, and a team of engineers in HMMVWs met Krulak's helicopter and then surveyed Qaraah. Lieutenant Colonel Skipper described the area as "a totally flat, barren, and desolate place, littered with dead camels."^{260**}

Four days later, Krulak, his staff, and Captain Brian J. Hearnberger, the commanding officer of Company B, 8th Engineer Support Battalion, surveyed a number of other locations to include a spot called Kibrit located 50 kilometers

*Col Pankey commanded 1st FSSG (Rear) at Camp Pendleton California, between August and December 1990. After Col Pankey departed for the Persian Gulf, Col John A. Kelly commanded 1st FSSG (Rear). (Pankey comments)

**LtCol Skipper added in his description of Qaraah that "We saw numerous dead camels which someone said had died from a plague. We also saw a four-foot-high vulture sitting on one of the carcasses. For new arrivals in the country, it was a great immediate impression on the challenges ahead of us." (Skipper comments)



Photo courtesy of Col Thomas S. Woodson

Direct Support Command Marines in eight HMMWVs survey the desolate site at Kibrit where the command would establish CSSA-1 to support the I MEF attack into Kuwait.

west of Mishab and 50 kilometers south of the Kuwaiti border.* Distinguishing characteristics of this area were a fold in the ground which would hide the silhouette of a camp below the skyline, an old dirt airfield, and a desert road that ran east to GSG-2 at Mishab. Additionally, Kibrit was close enough to the border to support an attack, but far enough away to be out of the range of Iraqi artillery. These advantages convinced General Krulak that Kibrit was the proper place to support I MEF's attack.²⁶¹

During this time, General Krulak met daily with General Brabham to decide the final distribution of units within the 1st FSSG. Both FSSG staffs and battalion commanders attended a nightly joint meeting co-chaired by the generals. Commanders presented recommendations for the best use of their units. For example, both Lieutenant Colonel Charlie F. Smith, who now commanded the 7th Motor Transport Battalion, and Lieutenant Colonel Thomas S. Woodson, who led the 8th Motor Transport Battalion, wanted the direct support role for their battalions and presented reasons for receiving the mission. By the 20th, Generals Brabham and Krulak decided the final distribution of forces. According to a previous agreement, in addition to responsibility for the Port of Jubayl, Colonel Pankey, who commanded GSG-1, would include in his organization the 2d Supply Battalion, 2d Maintenance Battalion, and 1st Landing Support Battalion, and then spin-off detachments, as needed, to the DSC and to GSG-2.²⁶² General Krulak would control the 7th Engineer Support Battalion, the 8th Engineer Support Battalion, the 2d Medical Battalion, the 8th Motor Transport Battalion, reinforced with most of the 1st FSSG's tactical motor transport assets, and landing support, maintenance, and supply detachments. The generals sent the 2d Landing Support Battalion, 7th Motor Transport Battalion, and 1st Medical Battalion to GSG-2, still commanded by Lieutenant Colonel Hayden. Hayden also took charge of the Headquarters and Services Battalion, 1st FSSG, which remained at Jubayl.²⁶³

On 22 December, General Krulak activated the DSC, focused its efforts on building Combat Service Support Area (CSSA) 1 at Kibrit, and established a direct support pipeline to the ground combat element. General Krulak used the Headquarters and Service Battalion, 2d FSSG, as his command element and received from GSG-1, the 2d Medical Battalion, 8th Engineer Support Battalion,

*Capt Hearnberger had the mission of starting construction at the new CSSA. LtCol Skipper commented that "his presence at the recon was critical." (Skipper comments)

and 7th Engineer Support Battalion. He ordered Lieutenant Colonel Charles O. Skipper, who led the 8th Engineer Support Battalion, to build a command post at Mishab and to begin the massive construction effort at Kibrit. Krulak directed Lieutenant Colonel David L. John to bring the 7th Engineer Support Battalion to Kabrit after completing its work at Mishab. Colonel Powell, the DSG-1 commander, who had reported to General Krulak on the 13th, transferred CSSD-142 which operated FASP -1 and -2 to GSG-1 on the 23d, and moved CSSD-111 to the northern part of the Triangle.* DSG-1 remained responsible for support of the 1st Marine Division.²⁶⁴

On 20 December Krulak activated DSG-2 at Jubayl under Colonel Thomas P. Donnelly, Jr., the former 2d FSSG Deputy Chief of Staff for Operations, to sustain the 2d Marine Division. Colonel Donnelly planned a combat support area, similar to the one that DSG-1 established with CSSD-10, but unlike Colonel Powell, he did not plan to create a separate general support organization like CSSD-10. The DSC sent personnel and equipment to DSG-2 and on the day after Christmas, Colonel Donnelly began setting up a support area at CSSD-111's old position near Abu Hadriyah. To provide direct support to the division's maneuver regiments, Donnelly intended to establish MCSSD-28 to support the 8th Marines when it arrived in January. To sustain the 6th Marines, which deployed to Saudi Arabia in mid-December, he deployed MCSSD-26, under recently arrived Lieutenant Colonel David L. Wittle.²⁶⁵

Lieutenant Colonel Wittle organized his command into headquarters, motor transport, engineer, maintenance, supply, landing support, ammunition, communications, medical, and military police detachments. Wittle, together with his executive officer, Major Charles J. Clarke, had recommended tables of equipment and organization to the DSC based on their extensive experience as CSSD commanders during numerous combined arms exercises (CAX) at the Marine Corps Air Ground Combat Center, Twentynine Palms, California.** After a review and adjustment of these requirements, the DSC sent detachments, mostly from the battalions of the 2d FSSG, to MCSSD-26. The highest personnel strength that MCSSD-26 attained was 259 Marines and sailors.²⁶⁶ On 29 December, MCSSD-26 moved from the Port of Jubayl to the Cement Factory Ridge to join the 6th Marines.²⁶⁷

While DSG-2 established itself, the 8th Engineer Support Battalion started the huge construction effort to support the DSC. On 21 December, the battalion commander, Lieutenant Colonel Skipper, ordered Captain Hull's Company C to Mishab to build the DSC's rear area camp. Six days later, Skipper directed Captain Brian J. Hearnberger to move Company B to Kibrit and start building

*CSSD-142 was redesignated Ammunition Company, 2d Supply Battalion, GSG-1.

**The CAX program consisted of two weeks of training culminating in a three-day mechanized attack across 80 kilometers of desert at the Marine Corps Air Ground Combat Center, Twentynine Palms, California. The Marine Corps conducted 10 CAXs per year which exercised a regimental headquarters in command of a reinforced infantry battalion, an aviation combat element, and a CSSD of about 300 Marines and sailors. Together, Lt Col Wittle and Maj Clarke commanded three different CSSDs in support of eight CAXs in the mid-1980's. (Wittle comments and BAT Tape 1390A)

the roads, fuel farm, and ammunition supply point that would make up the combat service support area. Skipper ordered Hearnberger to travel during the day, since he was concerned that local Saudi forces might shoot at them during the night. Skipper visited the commanders of the Saudi 8th and 10th Brigades who guarded the border, to brief them on the 8th Engineer Support Battalion's presence and operations at Kibrit. Even though intelligence reports showed that the Iraqis were in defensive positions and unlikely to attack, General Krulak obtained infantry support to guard Kibrit. Until the security force arrived, the 8th Engineer Support Battalion would rely on its own machine guns and LAAW hand-held antitank weapons to protect the site. On the afternoon of 27 December, Company B moved into Kibrit, started construction on CSSA-1, and was joined, three days later, by Captain Hull's Company C. At the end of December, the 8th Engineer Support Battalion was the closest I MEF unit to the enemy.²⁶⁸

The Year Ends

Emphasis on defensive operations was no longer a priority and a shift occurred to the offensive. —3d MAF Command Chronology

By the end of December, I MEF had absorbed reinforcements and leaned

Table: 1st FSSG on 31 December 1990²⁶⁹

Unit	Subordinate Units		
DSC	H&S Bn, 2d FSSG 7th Engineer Support Bn 8th Engineer Support Bn 8th Motor Transport Bn 2d Medical Bn Det, 2d Maintenance Bn Det, 2d Supply Bn	DSG-1 -CSSD-111 -CSSD-141	DSG-2 -MCSSD-26 -MCSSD-28
GSG-1	2d Supply Battalion 2d Maintenance Battalion 1st Landing Support Battalion Det, Dental CSSD-131 CSSD-132		
GSG-2	Det, H&S Bn 7th Motor Transport Battalion 2d Landing Support Battalion 1st Medical Battalion Det, 2d Maintenance Battalion Det, 2d Supply Battalion Det, 8th Engineer Support Battalion Det, Dental		
H&S Bn	H&S Co, 1st FSSG Service Company -Information Management Unit -Exchange Platoon -Postal Platoon -Disbursing Platoon -Legal Support Section Military Police Company Communications Company		

forward towards Kuwait with its combat and combat service support units largely in place. General Boomer commanded two divisions, 301 aircraft, a Seabee regiment, and the better part of two FSSGs, spread over 300 kilometers from Bahrain to Kibrit. The 2d FSSG reinforced the 1st FSSG and established the DSC which would provide direct combat service support to the attacking forces from its forward base at Kibrit. GSG-2 stood up with the mission of stockpiling supplies in Northern Saudi Arabia and sending them to the DSC. GSG-1, H&S Battalion, 1st FSSG, and the 3d NCR remained in general support of the MEF while MWSSG-37 took charge of the 3d MAW ground combat service support. As I MEF came together as an offensive force, the last peaceful month passed while the United Nations deadline of mid-January rapidly approached without any indication of an Iraqi withdrawal from Kuwait.

Table: Logistics support overview on 31 December 1990²⁷⁰

Location	Logistics Unit (S)	Supported Unit (S)	Distance To Saudi-Kuwaiti Border (Km)
Kibrit	DSC		50
Mishab	GSG-2 MWSS-273 NMCB-74 Det, 7th ESB	DSC	50
Tanajib			90
Manifah Bay/ Abu Hadriyah	DSG-1 -CSSD-111 -CSSD-141	1st MarDiv -TF Ripper -TF Shepherd -TF Taro	120
Jubayl Naval Air Facility	MWSS-374 CSSD-132 NMCB-5	MAG-16 MAG-26	195
Port of Jubayl/ Industrial City	1st FSSG -DSC CE --DSG-2 ---MCSSD-26 ---MCSSD-28 -GSG-1 -H&S Bn 3d NCR CE -NMCB-24 -NMCB-40	I MEF CE -2d MarDiv CE --6th Marines --8th Marines	210
King Abdul Aziz Naval Air Station	MWSSG-37 CE -MWSS-174 -MWSS-271 Det, CSSD-132 Det, NMCB-24	MAG-13 (Fwd)	220
Ras Al Ghar	Det, MWSS-174	Det, MAG-16	240
Shaikh Isa	MWSS-373 CSSD-131 Det, NMCB-74	3d MAW CE -MAG-11 -MACG-38	360

Desert Shield Ends and Desert Storm Begins: 1-31 January 1991

The Situation

United Nations Resolution 678—Authorized UN Members to use “all means necessary” ...if Iraq does not leave Kuwait by 15 January 1991.—DoD, Final Report to Congress on the Conduct of the Persian Gulf War

The new year began with the breakout of hostilities imminent.²⁷¹ General Schwarzkopf had set 17 January as the date for the start of the air war and the 3d MAW made its preparations for air attacks against targets in Iraq and Kuwait from its fixed-wing bases in Bahrain and Saudi Arabia. The 1st Marine Division moved north to allow the 2d Marine Division to relocate to the field. As the countdown progressed, I MEF refined its plan against Iraqi forces in Kuwait and decided against an amphibious landing. The revised plan still called for the 1st Division to penetrate the two lines of Iraqi mines and obstacles in Kuwait and seize MEF Objective A, Al Jaber Air Base. As in the original scheme of maneuver, the 2d Marine Division was to follow the 1st Marine Division through the breach, but, now, instead of linking up with an amphibious force, would maneuver to the left of the 1st Marine Division and launch the main attack northwest towards Objective C, the choke point at Al Jahra. The 1st Marine Division would attack on the 2d Marine Division's right flank and seize MEF Objective B, Kuwait International Airport.²⁷² General Krulak's DSC would support both divisions from its base at Kibrit and the 3d MAW would provide helicopter support from Mishab and Tanajib.

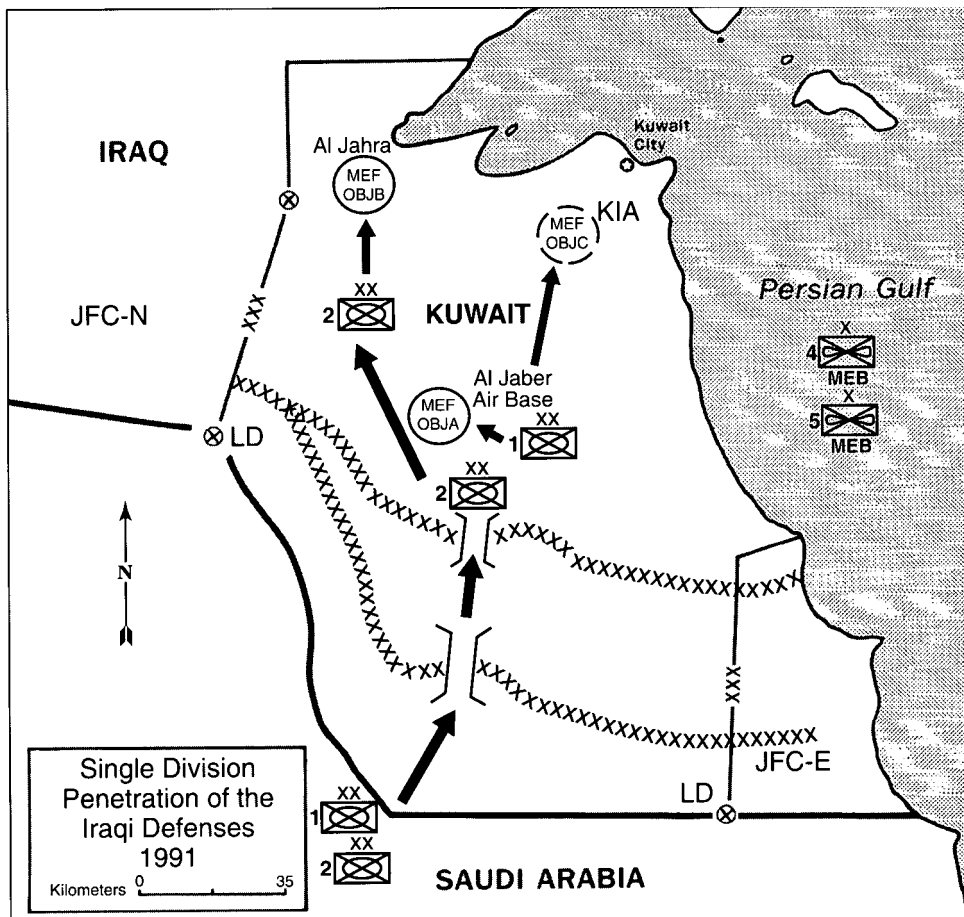
Leaning North: 1-16 January 1991

*By 15 January, all units of 1st FSSG were in position and ready to conduct offensive operations to liberate Kuwait.*²⁷³

*MWSG-37 has provided all ground support requirements necessary for the 3d MAW . . .*²⁷⁴

Marine Wing Support Group 37

With the air war about to be launched on the 17th, the southern MWSSs of MWSG-37 completed preparations for operations. To improve support for fixed-wing operations at Shaikh Isa, Lieutenant Colonel Stephen D. Hanson, the commanding officer of MWSS-373, established an air operations division, commanded by Captain Donald A. Thompson. The new organization provided base operations, crash and fire rescue, refuelling, expeditionary airfield services, and weather reporting.²⁷⁵ At Jubyal Naval Air Facility, MWSS-374 had its hands full



with MAGs -16 and -26 and the 3d MAW headquarters, but completed there, with the help of the Seabees, the third helicopter parking apron. At King Abdul Aziz Naval Air Station, MWSS-174 expanded its operations by installing another tactical fuel dispensing system to support Harrier and OV-10 combat missions. Lieutenant Colonel James P. Chessum, the commanding officer of MWSS-174, sent a construction team to help MWSS-273 at Mishab, and provided trucks for the newly arrived MWSS-271.²⁷⁶

Although MWSS support in the south was well established, setting up in the north ran into rain and host nation reluctance. The arrival of the main body of MWSS-271, commanded by Lieutenant Colonel Richard H. Zegar, at King Abdul Aziz Naval Air Station on 6 January, gave Colonel Coop, the MWSG-37 commander, the ability to expand support for helicopter operations in northern Saudi Arabia. Expecting to support MAG-16 at Tanajib, MWSS-271 joined its advance party, collected its equipment, and then waited. The Saudi national oil company, ARAMCO, which owned the airfield at Tanajib, would neither allow MAG-16 nor MWSS-271 access to its facilities. Instead, on 12 January, Lieutenant Colonel Zegar sent a detachment to Kibrit to operate a FARP for elements of MAG-26,

and seven days later dispatched 30 military policemen to MWSS-273.* Just south of the Kuwaiti border at Ras Al Mishab, MWSS-273 struggled against nature to prepare for the arrival of MAG-26. After repairing the damage caused by torrential rains on the 13th, Lieutenant Colonel William L. Riznychok's Marines, with the help of a construction team from MWSS-174, rebuilt an access road to the ammunition dump, refueled helicopters, opened a new mess hall, continued construction on the base camp, produced water with its ROWPUs, and, prudently, hardened bunkers.²⁷⁷

Table: Marine Wing Support Group 37

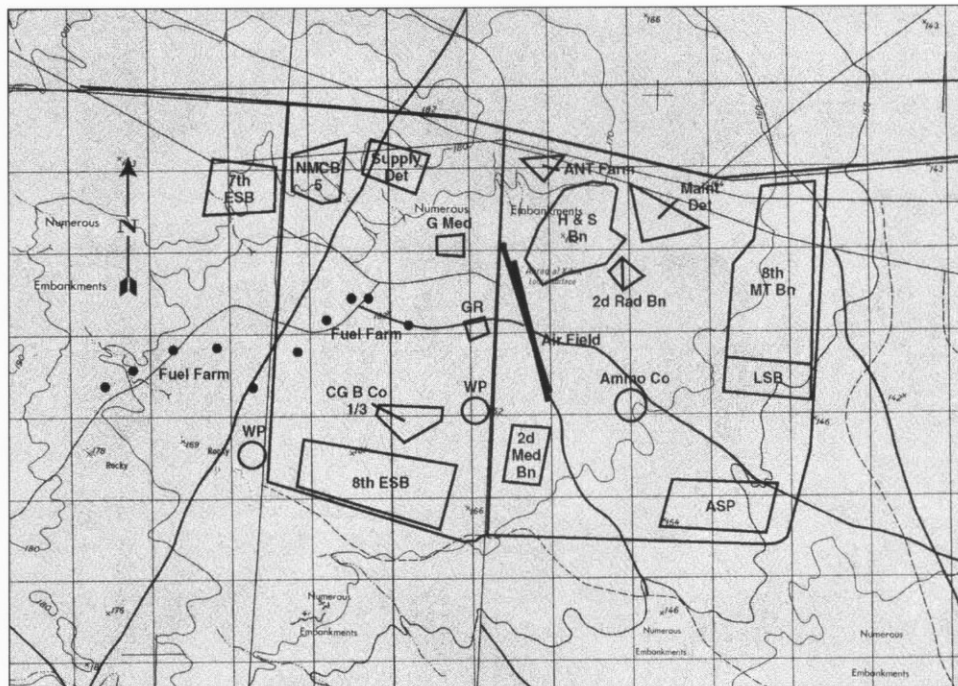
Marine Wing Support Squadron	Primary Location	Primary Supported Unit
MWSS-174	King Abdul Aziz Naval Air Station	Mag-13 (Forward)
MWSS-271	King Abdul Aziz Naval Air Station	Planned to Support MAG-16 at Tanajib
MWSS-273	Ras Al Mishab	Planned to Support MAG-26
MWSS-373	Shaikh Isa	MAG-11
MWSS-374	Al Jubayl Naval Air Facility	MAGs-16 and -26 3d MAW HQ

Setting Up Kibrit

While the 3d MAW prepared for the coming air war, Generals Krulak and Brabham focused their attention on making Kibrit ready to support the ground assault. To supervise the effort, on New Year's Day, Krulak moved his main command post to Mishab and his forward command element to Kibrit. He sent a planning team, led by Lieutenant Colonel John A. O'Donovan, the DSC's deputy operations officer, to I MEF headquarters to assist in developing the various logistic schemes to support the different ground attack options under consideration.^{278**} On the 4th, Company C, 1st Battalion, 3d Marines, arrived at Kibrit to provide security. Two days later the 7th Engineer Support Battalion reinforced the 8th Engineer Support Battalion to assist in the construction of CSSA-1.²⁷⁹ By

*Col Skipper, who commanded the 8th Engineer Support Battalion, commented that "Due to a shortage of manpower in the MWSS, the FARP was totally constructed by the 8th Engineer Support Battalion and over 50% of the fueling was done by Marines of the bulk fuel company." (Skipper comments)

**Col O'Donovan noted that Gen Krulak, Col John A. Woodhead, the DSC's Chief of Staff, and Col Tace, the DSC's operations officer, attended the I MEF commander's meetings and planning updates to keep abreast of developments. (O'Donovan comments)



DSC Command Chronology, Dec 1990-Feb 1991.

The DSC designed Kibrit to be spread over 40 square kilometers. CSSA-1 overlay shows the vast size of the logistics area needed to support two attacking divisions.

mid-month, the DSC's engineers finished building a sprawling complex spread over 40 square kilometers as a defensive measure against Iraqi air and artillery attack. The 8th Engineer Support Battalion and the 7th Engineer Support Battalion built a 73-cell ammunition support point, improved the 3,000-foot air strip, established a 1.8-million-gallon fuel dump, stored 500,000 gallons of water, dug in two field hospitals, and surrounded the entire complex with a blast berm.²⁸⁰

On 5 January, Saudi Motors began delivering supplies to Mishab. Three days later, General Brabham returned the 8th Motor Transport Battalion to General Krulak, which gave the DSC a strength of 352 officers and 6,537 enlisted Marines and sailors.^{281*} At the Port of Jubayl, Colonel Pankey replaced the 8th Motor Transport Battalion with the newly arrived Reservists from the headquarters of the 6th Motor Transport Battalion, commanded by Lieutenant Colonel Larry D. Walters. The Reservists took over the management of Saudi Motors just in time to confront the increasing hesitation of foreign drivers to work as the war approached.²⁸² To counter this reluctance, Walters assigned Marines as assistant drivers, which reassured the foreign drivers and gave the newly arrived Reservists an opportunity to familiarize themselves with the countryside.²⁸³

On 6 January, Captain Johnson began moving Seabees north to assist in the establishment of the DSC at Kibrit. Commander Walsh sent elements of

*The 8th Motor Transport Battalion began moving to Kibrit on 28 December, but was not officially transferred from GSG-1 to the DSC until 5 January. (Woodson comments)



Photo courtesy of CWO5 Thomas M. Sturtevant
"Saudi Motors" truck convoy arrives with supplies at Kibrit. This improvised organization filled a gap in the I MEF transportation system.

NMCB-5 to the site to drill for water, but unfortunately, after several attempts, the well collapsed at a depth of 1,000 feet. The Seabees restored an existing 1,200-foot well to operation by replacing its submersible pump.* On the 10th, Walsh dispatched a second crew to build a camp for 500 Seabees immediately inhabited by NMCB-40 which arrived to maintain the roads between Kibrit and Mishab. The rapid deterioration caused by extensive truck traffic forced the Seabee commander to assign NMCBs -5 and -40 the responsibility of repairing the 20 kilometers of road east of Kibrit, and NMCBs-24 and -74 the mission of fixing the 30 kilometers of road west of Mishab.** The rains on the 13th damaged the marl and sand road and caused the Seabees to work 24 hours a day to repair the destruction. To coordinate northern operations, Johnson moved 10 members of the 3d NCR headquarters with I MEF's forward headquarters to Safaniyah, located equidistant between Mishab and Tanajib. Even though the bulk of the 3d NCR remained in the south, the focus had shifted north.²⁸⁴

DSG-1 Reorganizes and Deploys to the Field

While the generals concentrated on establishing Kibrit, DSG-1 reorganized to support offensive operations and moved north with the 1st Marine Division. Executing the plan devised in November, CSSD-111 became CSSD-10

*LtCol Skipper, the 8th Engineer Support Battalion commander, commented that "They (the Seabees) tried mightily, but were unsuccessful at drilling a new well." (Skipper comments)

**Moderate driving on a desert road turned it into a washboard surface that bounced well-secured cargo off the back of trucks. Drivers, to avoid the painful jarring, drove in virgin strips of sand parallel to the old path. In a matter of days, road systems hundreds of meters wide emerged. The Seabees graded the roads and eliminated the widening effect. (Songer comments and Burke comments)

and refocused its efforts on providing general support to the 1st Marine Division. Lieutenant Colonel Kelly remained in command. At Manifah Bay, Captain Burke renamed CSSD-141, MCSSD-11, and restructured the organization to provide direct support to Task Force Papa Bear (the 1st Marines). Colonel Powell ordered Captain Edward J. Winter, the former CSSD-111 operations officer, to form MCSSD-17 with the mission of supporting Task Force Ripper (the 7th Marines). Later in the month, Colonel Powell tapped Captain William H. Ritchie, III, who was working on the DSC staff, to command CSSD-13 and to support Task Force Taro (the 3d Marines) at Mishab.* As DSG-1's subordinate commands moved to locations near their supported task forces, Colonel Powell moved his headquarters element north of the Triangle and focused his efforts on refining the division's support requirements, obtaining equipment and personnel from the DSC, and looking for more efficient ways to sustain the division.²⁸⁵

Table: Direct Support Group 1 lineage

Old Name	New Name	Function/Unit Supported
CSSD-111	CSSD-10	General Support/1st Marine Division
CSSD-141	MCSSD-11	Direct Support/Task Force Pappa Bear
N/A	CSSD-13	Direct Support/Task Force Taro
N/A	MCSSD-17	Direct Support/Task Force Ripper

Task Force Ripper was one of the two mechanized regiments that gave the 1st Marine Division its primary combat power and mobility. Colonel Carlton W. Fulford, Jr., commanded the task force which consisted of the 7th Marines headquarters element; the 1st Battalion, 5th Marines (mechanized); the 3d Battalion, 7th Marines (mechanized); the 3d Tank Battalion; and the 1st Combat Engineer Battalion. Exceeding a personnel strength of 4,800 troops, Ripper had concentrated its extensive mobility and fire power in 75 M60A1 tanks, 124

*DSG-1 renumbered CSSDs to conform with the numeric system used by DSG-2. For example, MCSSD-11 supported Task Force Papa Bear whose nucleus was the 1st Marines. The first "1" in MCSSD-11 designated it as supporting the 1st Marine Division and the second 1 designated the regiment as the 1st Marines. MCSSD-17 supported Task Force Ripper (7th Marines), and CSSD-13 supported Taro (3d Marines). The "0" in CSSD-10 indicated that the organization was in general support, while the 1 indicated it was in support of the 1st Marine Division. Accordingly, MCSSD-26 supported the 6th Marines and MCSSD-28 sustained the 8th Marines. Both regiments belonged to the 2d Marine Division. (Powell comments)



Photo courtesy of Col Alexander W. Powell

Col Alexander W. Powell poses with his DSG-1 detachment commanders in a group picture. From left are Capt Adrian W. Burke (MCSSD-11), Capt Edward J. Winter (MCSSD-17), Col Powell (DSG-1), and LtCol Richard L. Kelly, (CSSD-10)

amphibious assault vehicles, and 22 5-ton trucks. The 3d Battalion, 11th Marines, provided direct artillery support to the task force. On 1 January, Ripper moved 70 kilometers from its Desert Shield position at Abu Hadriyah to a location 30 kilometers northwest of the Triangle. At this location, Colonel Fulford continued to plan, train, and prepare equipment for the attack into Kuwait.²⁸⁶

On 6 January, the newly established MCSSD-17, under Captain Edward J. Winter, formed around the former CSSD-111 motor transport detachment, joined Task Force Ripper in its new position.²⁸⁷ Captain Winter, although a new MCSSD commander, was neither new to the desert, nor to Task Force Ripper. Winter entered Saudi Arabia with the 7th MEB's Surveillance, Liaison, and Reconnaissance Party back in August, and after the bulk of BSSG-7 arrived, commanded Company B, 7th Motor Transport Battalion.* When the 1st FSSG stood up the following month, he went to work as CSSD-111's operations officer, where he distinguished himself in perfecting night convoy resupply operations with the division, including Task Force Ripper.²⁸⁸ During the Desert Shield phase, Captain Winter participated in the 1st Marine Division LOGEX and used his knowledge to construct the tables of organization and equipment of the MCSSD that would support Task Force Ripper. When MCSSD-17 formed and moved north of the Triangle, it was led by and manned with experienced Marines and sailors who knew their jobs and the units they supported.²⁸⁹

Captain Winter designed MCSSD-17 to provide one day of supplies and limited services to Ripper. The mobile transported 17,500 gallons of fuel, 12,400 gallons of water, empty bags for ground bulk liquid storage, one day of ammuni-

*During July and early August 1990, Capt Winter prepared Company B, 7th Motor Transport Battalion, to participate in Display Determination in Turkey with BSSG-7 by conducting extensive mobile resupply training with the 5th Marines. (Maj Edward J. Winter comments on draft, 26Sep96, Author's Files, hereafter Winter comments)

tion, MREs, batteries, and medical supplies.* To obtain supply support, Ripper's battalions placed representatives with MCSSD-17's supply section.²⁹⁰ After receiving an order for parts, the MCSSD passed the requests to CSSD-10, which in turn, filled the demand and sent the items to MCSSD-17 for delivery to the requested unit. Three RT 4000 forklifts, a TRAM, and the cranes on the MK-17 LVS trailers gave the mobile its material-handling capability. A LVS pulled an 870 trailer which hauled a D7 bulldozer. Winter divided his Mobile into a headquarters element, commanded by First Lieutenant Patrick W. Ford, and two mini-mobiles which delivered supplies. Second Lieutenant David J. Eskelund, former commander of CSSD-111 (South), led Mobile 1, and First Lieutenant Edwin E. Middlebrook, formerly a motor transport officer in CSSD-111, commanded Mobile 2.²⁹¹ MCSSD-17 practiced moving into position and setting up in an inverted triangle with each mini-mobile taking a point nearest the enemy and the headquarters element forming the third point away from the threat. Within the security triangle, Captain Winter practiced building a hasty enemy prisoner of war compound and temporary dumps to push supplies to Ripper with its two mobiles.²⁹²

Colonel Richard W. Hodory commanded Task Force Papa Bear, which was the 1st Marine Division's other mechanized fist. This task force consisted of the command element from the 1st Marines, which reached Saudi Arabia two days before Christmas; the 1st Battalion, 1st Marines, which arrived in January; the 3d Battalion, 9th Marines of "Speed Bump" fame; and the Desert Shield veterans of the 1st Tank Battalion. Company A, 1st Combat Engineer Battalion and the 1st Battalion, 11th Marines were in direct support of the task force.²⁹³ On 1 January, Papa Bear established a mobile defense north of the Triangle and then trained, collected equipment, and planned for the assault.²⁹⁴

At Manifah Bay, Captain Burke sent half of his personnel and a good amount of his equipment to other DSG-1 units as he transformed CSSD-141 into MCSSD-11 to support Task Force Papa Bear.²⁹⁵ Burke lost half of his landing support capabilities, but doubled the size of his motor transport detachment.²⁹⁶ He organized MCSSD-11 into alpha, bravo, and charlie trains and alpha and bravo command groups. The mission of the Alpha and Bravo Trains was to distribute supplies to Task Force Papa Bear while the Charlie Train contained the mobile's internal support capabilities. First Lieutenant Delaney C. Williams commanded the Alpha Train, First Lieutenant Juan C. Osorno led the Bravo Train, and First Lieutenant Daniel B. Conley directed Charlie Train's efforts.²⁹⁷

On 6 January, MCSSD-11 moved 15 kilometers west of Manifah Bay and set up within easy reach of all elements of Task Force Papa Bear. Captain Burke supported the task force, instructed newly arrived units on combat service support methods, and continued training MCSSD-11 in convoy and security procedures.²⁹⁸ MCSSD-11 practiced establishing the defensive triangle position with the Alpha and Bravo Trains pointed toward the threat and the Charlie Train located furthest from the enemy. Each train was a self-contained security entity that

*The term "mobile" is used as a synonym for mobile combat service support detachment (MCSSD).



Photo courtesy of Maj Adrian W. Burke

MCSSD-11 Commander Capt Adrian W. Burke poses with his staff. From left are SSgt Mark W. Fishback (detachment gunnery sergeant), 1stLt Daniel B. Conley (Charlie Train commander), 1stLt Charles W. Grove (executive officer), Capt Burke, 1stLt Joseph W. Eason (supply officer), and MSgt Alfred Chavez (operations chief).

could defend itself when one or more trains departed the area. An interval of 500 meters was maintained between trains as a protection against Iraqi artillery fire, while the gaps between the mini-mobiles were covered by interlocking fields of fire.²⁹⁹

During this early January period, the general support element of DSG-1 was also active. On New Year's Day, Lieutenant Colonel Kelly moved the newly-named CSSD-10, 35 kilometers to the northern part of the Triangle, just south of the A-B road along a gravel thoroughfare called Crusher Road. CSSD-10 arrived in the area before the division grew in size, and began executing its mission. Because of the Iraqi air threat, Kelly had his Marines dig in their new positions, which were dispersed within a 10-kilometer perimeter.³⁰⁰ From Crusher Road, CSSD-10 executed its new general support mission by pushing food, water, fuel, and ammunition to MCSSDs-11 and -17 and artillery ammunition to the 11th Marines. The 1st Marine Division's smaller task forces and independent units pulled provisions from the CSSD.³⁰¹ A second collecting and clearing company, a graves registration section, a Reserve ammunition platoon, and a military police detachment joined CSSD-10, augmenting its capabilities, and increasing its size to 880 Marines and sailors.^{302*}

CSSD-10's maintenance detachment helped keep the 1st Marine Division's equipment readiness level at 96 percent. First Lieutenant Kevin R.

*The Reserve ammunition platoon was from the Ammunition Company, 4th Supply Battalion, 4th FSSG, Greenville, South Carolina. (Powell comments). For a brief period, CSSD-10 had three collecting and clearing companies which increased its size to over 1,000 Marines and sailors. The third company was later transferred to the DSC. (Kelly comments)

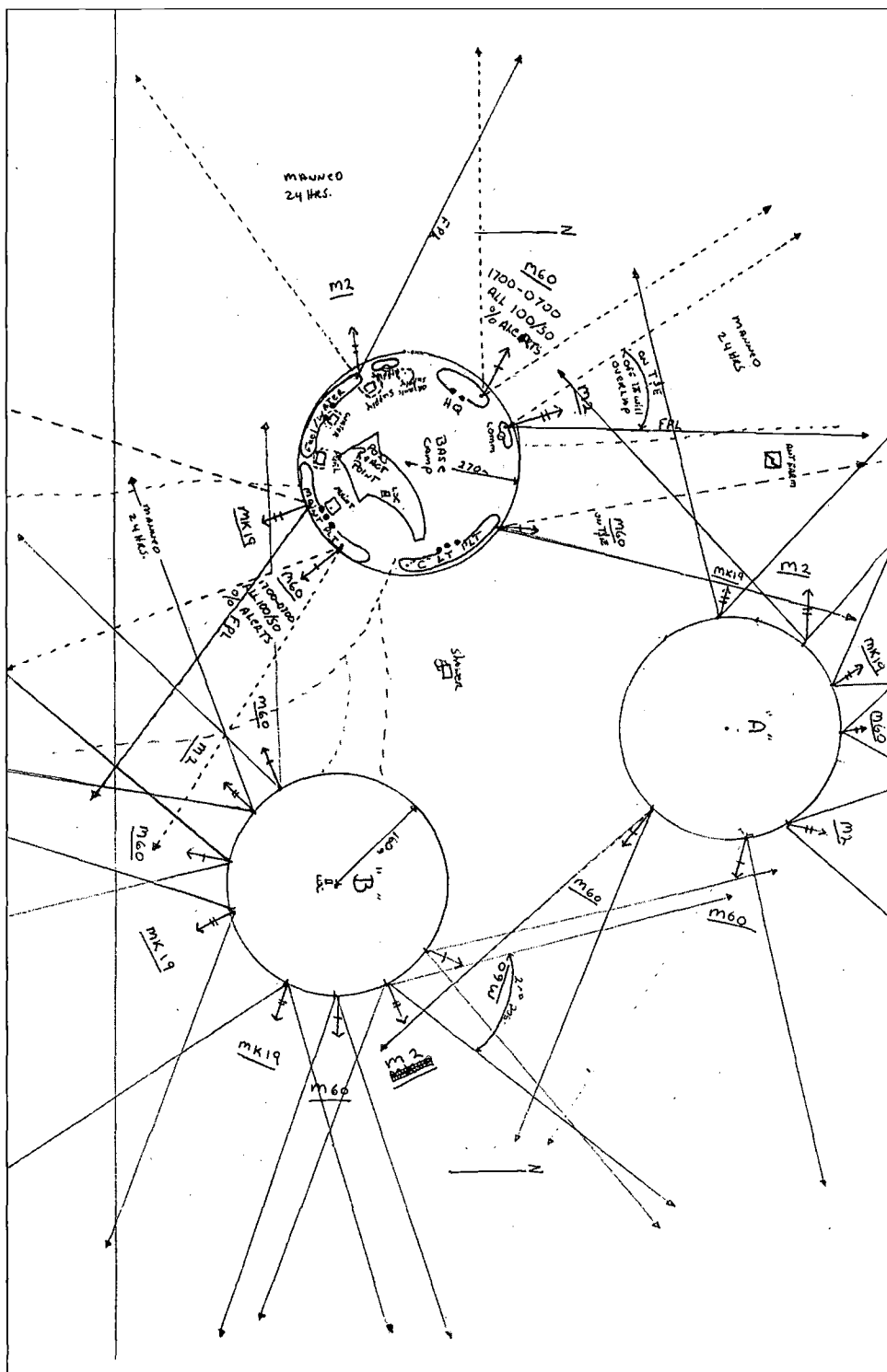


Photo courtesy of Maj Adrian W. Burke

MCSSD-11's defensive fire plan integrates the Alpha, Bravo, and Charlie trains' fields of fire.



Photo courtesy of LtGen James A. Brabham, Jr.

A 1st FSSG maintenance contact team together with a wrecker work on an amphibious assault vehicle (AAV) in the field. Note the applique armor bolted to the side of the AAV.

Wightman, a limited duty ordnance officer with 10 years of desert experience, two previous tours of duty in the Middle East, and who had deployed to the Cement Factory Ridge during August with CSSD-72, led the 180-man maintenance detachment. Wightman's team conducted overflow second echelon, full third echelon, and limited fourth echelon maintenance on the 1st Marine Division's equipment which was either brought back to CSSD-10's maintenance area or fixed by contact teams dispatched to forward areas. Between October and February, CSSD-10/111 deployed 800 contact teams to front-line locations, often at night and always, commanders worried, without adequate equipment to navigate and to protect themselves. Wightman sent items that exceeded CSSD-10's capabilities or took too long to fix to the DSC for repair and return. The maintenance detachment was mobile, taking only four hours to pack up and move by using old maintenance vans mounted on Vietnam War-vintage two-and-a-half-ton trucks.³⁰³

Ingenuity

In every war, a group of usually forgotten Marines, who are normally in harm's way, develop creative solutions to problems unforeseen by centralized planners and rear echelon tacticians. By January, DSG-1 had spent more than four months in the desert performing combat service support in a high-threat environment. As individuals and as a group, Colonel Powell's Marines and sailors had experienced and ruminated on the many shortfalls and difficulties that confronted them. By January, DSG-1 had gone a long way in developing innovative and cre-



Photo courtesy of LtGen James A. Brabham, Jr.

1st FSSG medical personnel practice decontaminating chemical casualties in the field.

ative solutions to many combat service support conundrums.

At Crusher Road, CSSD-10 grappled with methods for handling and evacuating large volumes of wounded from the battlefield. Based on reports that Iranian medical personnel were often contaminated by chemically infected casualties during the Iran-Iraq war, Major William Lucenta, CSSD-10 S-3 Officer and a native of Massachusetts, looked for ways to decontaminate the wounded prior to receiving medical treatment. The maintenance detachment made stretchers by welding bedsprings to poles for carrying chemically dirty casualties to be sprayed at a decontamination site before receiving medical care. In a technique borrowed from the 11th Marines, the detachment would sandwich the contaminated Marine between swaths of chain link fence which allowed him to be sprayed, flipped, and sprayed again before seeing a doctor. Faced with the problem of removing an estimated 3,000 wounded from the battlefield with only two HMMWV ambulances,

Lieutenant Colonel Kelly directed Lieutenant Wightman and a team of medical personnel to devise other ways to get the wounded out.³⁰⁴ As a result, Master Sergeant James R. Briley in his machine shop designed and prefabricated racks, which were hung by pins on the outside of MK 17 LVS trailers when fully loaded with cargo, then flipped inside the trailer, when emptied, to be fitted with stretchers. Twelve patients could be carried in this manner while medical personnel provided care from the center of the trailer.^{305*}

Another DSG-1 innovation was the development of the rapid refueling system. The Marine Corps did not possess a mobile system that could quickly refuel a large number of ground vehicles in a tactical situation. Two nozzles distributing fuel from a 55-gallons-per-minute pump was the best solution devised before the war. To refuel rapidly the 1st Marine Division's fleet of vehicles, Chief Warrant Officer-2 Robert A. Collins, CSSD-10's engineer officer, blended components from different bulk fuel systems to make from scratch a system that could simultaneously refuel eight vehicles in the field.^{**} The heart of the system was a 600-gallon-per-minute pump which was tied to separators and hoses that reduced and distributed enough pressure to fuel the vehicles simultaneously. The system was hauled by either a Commercial Utility Cargo Vehicle (CUCV) pickup truck or a HMMWV and connected to LVSs carrying sixcon fuel pods in order to set up a mobile refueling point.^{***} Two systems could refuel an entire tank company at one time while one system could fill up an entire amphibious assault company of 44 vehicles in an hour. MCSSDs -11 and -17 individually deployed two of the rapid refueling systems, which caught the eye of General Krulak who ordered the 8th Engineer Support Battalion to construct 10 systems for DSG-2.^{****} Lieutenant Colonel Wittle, commanding officer of MCSSD-26, modified a version of the system which dispensed fuel from six points.³⁰⁶

CSSD-10's maintenance detachment was a hotbed of ideas and initiative that kept the division and the DSC operating. In the dusty and wind-swept desert, Lieutenant Wightman's Marines modified circuit cards for the TOW II missile

*The lack of stretchers was another problem solved by innovation. Capt Burke used sections of piping used to hold camouflage material above the tents and a swath of chain-link fence to make a stretcher. MCSSD-17 found that their field expedient stretchers fit in the LVS ambulances. (Burke comments)

**The rapid refuelling system evolved from a hybrid system developed at Manifah Bay by WO Collins during the fall of 1990. Collins calculated the proper pressure settings and chose components that CSSD-141 put together, tested, and used to fuel both helicopters and ground vehicles. When DSG-1 switched to the offensive, the Manifah Bay system was adapted for mobile operations. (Burke comments)

***The Marine Corps uses commercial pick-up trucks which are officially called commercial utility cargo vehicles (CUCVs). (TM 11240-15/4a, p. 2-22)

****Col Skipper, the commanding officer of the 8th Engineer Support Battalion, added that "the manufacture of ten rapid refuelling systems would have cannibalized all eight of our amphibious assault fuel systems. Accordingly, we managed to get several key components built by Zahaid, the Caterpillar Tractor dealer in Jubayl. Ultimately, we were able to equip DSG-2, MCSSD-26, and MCSSD-28 without degrading our bulk storage systems." (Skipper comments)



Photo courtesy of LtGen James A. Brabham, Jr.

A Rapid Refuelling System is seen in operation. Note the 600-gallons-per-minute pump on the left side of the picture.

guidance system and installed clean air modifications on M60 tanks.* Mechanics designed and prefabricated mounts for laser target designators on HMMWVs for forward air controllers, which eliminated the time-consuming and dangerous tasks of unpacking the laser for use and repacking it for transportation. Wightman copied the 11th Marines' design for mounting .50-caliber machine guns on 5-ton trucks when ring mounts were not available. He also participated in the design and conversion of MK 17 LVS trailers into ambulances, and figured out a way to make HMMWV engines from CUCV motors. Much of the work was prefabricated by Master Sergeant Briley's machine shop using metal scrounged from the ARAMCO facility at Safaniyah and from the United States Army.³⁰⁷

Wightman benefitted from his previous contacts with the U.S. Army's XVIII Airborne Corps when CSSD-111 had supported the airborne troopers at Abu Hadriyah.** The lieutenant traded tires, cokes, tents and "this and that" with the Army for stock metals, repair parts, and larger items such as 175 6.2-liter engines and 200 injectors to fix or replace engines damaged by the use of avia-

*Gen Krulak commented that Desert Storm was "the first time we went to war when you had optics as a major problem,...if your optics aren't ready you're not going to knock out a tank, so you had people up there, right on the front lines, men and women, who were optics repair people. They were doing things that we never thought would ever be done in such a mobile environment." (Krulak comments)

**LtCol Lucenta related one example of Lt Wightman's ability to create good will. After observing Wightman use a wrecker to lift a downed Apache helicopter onto a truck for the U.S. Army, a local Bedouin tribesman asked the lieutenant through gestures to lift his camel into the bed of a pickup truck. Lt Wightman rigged the unhappy dromedary with a sling and hoisted the animal with his wrecker into the bed of the Saudi's vehicle. (LtCol William Lucenta interview. 10April96)

tion fuel in ground vehicles.^{308*} All things considered, the 1st Marine Division profited from the creative genius and hard work of CSSD-10's maintenance detachment and its maintenance officer.

DSG-2 Deploys to the Field

On 4 January, DSG-2 became operational at CSSD-111's old Abu Hadriyah position and continued to collect people and equipment. More than half of the 868 Marines and sailors reporting to the DSG either fixed equipment or healed people.³⁰⁹ Colonel Donnelly had under him 218 medical personnel organized into two collecting and clearing companies from the 2d Medical Battalion. Navy Lieutenants Rupert F. Lindo and Henry T. Bierrum commanded Company A and Company C, respectively. Major Dalton J. Langlinais was in charge of the maintenance detachment of 226 Marines. The remaining personnel consisted of engineer, supply, landing support, communications, and motor transportation detachments. Captain Carl D. Matter formed the motor transport detachment with Company A, 8th Motor Transport Battalion, which he also commanded, and furnished trucks and drivers to both MCSSDs.³¹⁰ Captain Peter M. Ramey led the engineer detachment which was responsible for fuel and water storage, earth moving, and material handling. Colonel Donnelly arranged his headquarters element into Alpha and Bravo command groups, the latter of which was led by Lieutenant Colonel John C. Hering, the DSG-2 executive officer.³¹¹ By mid-month, the DSG helped transport the 2d Marine Division to the field, treated 93 patients, and issued 263,065 gallons of water and 252,678 gallons of fuel to the division and to its mobiles.³¹²

Table: Direct Support Group 2

Unit Name	Function/Supported Unit
DSG-2	Direct Support/2d Marine Division
MCSSD-26	Direct Support/6th Marines
MCSSD-28	Direct Support/8th Marines

*Many participants in Desert Storm believed that it was a myth that aviation fuel caused problems in ground vehicles. Lt Wightman stated, however, that aviation fuel damaged the injectors and engines on the 6.2 liter engines in the HMMWV and CUCV engines. Col Coop, MWSG-37's commanding officer, added that HMMWV engines ran hotter and only lasted 12,000-14,000 miles before requiring replacement. According to Major Langlinais, DSG-2's maintenance officer, the addition of 10 weight oil and Dextron 2 to the aviation fuel prevented problems. He believed the cause of most fuel pump, engine, and carburetor problems resulted from units not treating their fuel with lubricants. Col Woodson, the commanding officer of DSC's 8th Motor Transport Battalion, experienced minimal mechanical problems caused by aviation fuel, but added that engines ran a little hotter than normal. (BAT Tapes 6 and 1081, Woodson comments, and Coop comments)

By 3 January, MCSSD-26, still in a formative stage, completed its movement to the Cement Factory Ridge where Lieutenant Colonel Wittle established Repair and Replenishment Point (RRP) Hubert to support the 6th Marines.* From RRP Hubert, Second Lieutenant Shaun P. Kelley's motor transport detachment ran daily trips to the port where his trucks picked up equipment, such as tents and camouflage netting for the MCSSD as well as transporting 6th Marines' personnel to training at the Thunderbolt Range.** In addition, the motor transport detachment hauled a daily average of 7,000 gallons of water, 7 pallets of MREs, 5,000 gallons of fuel, and numerous loads of ammunition to the regiment. MCSSD-26's maintenance detachment, led by Master Sergeant James E. Rettinghaus, supported the 6th Marines by conducting limited technical inspections on the regiment's equipment to identify and correct third echelon maintenance problems.³¹³

In addition to the daily support given to the 6th Marines, MCSSD-26 prepared for combat. Captain David E. Fournier, the tactical coordination officer, organized crew-served weapons teams to protect the MCSSD and taught all officers and staff non-commissioned officers to request supporting fires and medevac helicopters. Vehicle operators refined day and night tactical driving skills, vehicle recovery procedures, and everyone fired his individual weapons.*** In addition, Lieutenant Colonel Wittle established the Combat Service Support Operations Center (CSSOC) as the mobile's cerebral cortex to process, task, track, and follow up on requests from the 6th Marines and to DSG-2. The CSSOC rapidly established effective convoy procedures that ensured safety. All convoy leaders and drivers reported to the CSSOC before a resupply mission with their radios and maps, and CSSOC personnel issued compasses and strip maps, and briefed the drivers on their resupply routes and link-up procedures.³¹⁴

In early January, Lieutenant Colonel Head used his staff from MSSG-22 as the nucleus to form MCSSD-28 which the DSC designed to provide direct support to the 8th Marines. In keeping with 2d FSSG procedures for building task organizations, DSC battalion commanders analyzed MCSSD-28's mission from their functional perspective and sent recommended tables of organization and equipment to the group staff. The DSC staff consolidated, scrubbed, and approved the battalion's recommendations after obtaining Lieutenant Colonel Head's views

*An RRP is a combat service support installation, normally established in forward areas, to support mechanized or other rapidly moving forces (FMFM 4-1, p. 13-3). LtCol Wittle named RRP's after MCCSD-26 personnel who performed well. This was a motivational tool used along the same lines as a meritorious mast. (Warker comments)

**The Thunderbolt range covered 585 square kilometers of desert southwest of the Triangle. The 2d Combat Engineer Battalion built the Division Mechanized Assault Course (DMAC) that simulated obstacles expected in Kuwait such as berms, tank ditches, trenchlines, and minefields. (2dMarDiv ComdC, 1Jan-18Apr91)

***Night Driving Skills were of particular importance. According to Maj Warker, the MCSSD-26 operations officer/logistics officer, "Our drivers did not turn on their normal headlights after we left the port of Jubayl." (Warker comments)



Photo courtesy of Col Alexander W. Powell

Col Thomas P. Donnelly, Jr., Commanding Officer, DSG-2, poses with his senior officers. From left are: LtCol John C. Hering, executive officer, DSG-2; Col Donnelly, LtCol David L. Wittle, commander MCSSD-26; and LtCol James W. Head, commander, MCSSD-28.

on the composition of his organization.* As a result of this process, MCSSD-28 formed with the same set of detachments as MCSSD-26, but with a slightly smaller number of people. On 8 January, Head activated MCSSD-28 at the Port of Jubayl and waited for the 8th Marines to collect its equipment and to move to the field.³¹⁵

The 8th Marines had reached Saudi Arabia in December while most of its equipment arrived by ship between 4 and 22 January. The 1st Battalion, 8th Marines, unloaded its equipment from MPSRon-1 and then logistically supported the regiment while at the port. On 11 January, the 8th Marines moved to the Thunderbolt Range to train on the Division Mechanized Assault Course and to wait for the remainder of its equipment. MCSSD-28 followed the regiment to the field, established a combat service support area near the Cement Factory Ridge, began supporting the 8th Marines, and started an intensive training program to sharpen combat and NBC survival skills.³¹⁶

Desert Storm Begins: 17-29 January 1991

It was now 2:30 A.M. and...my operations officer, reported that our airplanes and cruise missiles were airborne. "Okay," I said, "lets go to work." ³¹⁷

*The 2d FSSG's method for allowing the battalion commanders to initiate the organization of detachments is called the "Det" system instituted by MajGen Martin L. Brantner when he was the commanding general of the 2d FSSG in 1988. (Woodson Intvw, 19Mar96). This procedure differs from the 1st FSSG whose detachment commanders initiated the process.

Marine Wing Support Group 37

On 17 January, Desert Shield ended and Desert Storm began when Central Command ordered the air war to start. The 3d MAW attacked Iraqi targets, while MWSG-37 and GSG-1 “went to work” by pumping large amounts of fuel into General Moore’s attacking aircraft. At Shaikh Isa in January, MWSS-373 dispersed five million gallons of fuel stored by CSSD-131 to the fixed-wing aircraft of MAG-11 which flew the majority of 3d MAW’s missions.³¹⁸ At Jubayl Naval Air Facility, Lieutenant Colonel Stephen G. Hornberger, commanding officer of MWSS-374, set up two additional tactical fuel dispersing systems using equipment from FARP Foss, which he closed, and supported 1,613 helicopter missions by pumping 543,300 gallons of fuel.³¹⁹ CSSD-132 at Jubayl Naval Air Facility stocked fuel for MWSS-374 and at King Abdul Azziz Naval Air Station stored fuel for MWSS-174. At GSG-1, Colonel Pankey designated refuelling as the number one priority for CSSDs -131 and -132 and reinforced Shaikh Isa with Reserve engineers from the 6th Engineer Support Battalion. In all, MWSG-37 pumped 6,330,610 gallons of fuel into 3d MAW’s aircraft during the month.³²⁰

The beginning of hostilities finally convinced ARAMCO to grant permission for MAG-16 to move to Tanajib. On 18 January, Commander Doyle, commanding officer of NMCB-40, sent Seabees from NMCB-40 to Tanajib to expand facilities for MAG-16’s helicopters. The first order of business was to lay a 1,750,000-square-foot AM-2 helicopter parking area on a base of 200,000 cubic yards of soil. Next, the Seabees built a 1,600-foot taxiway, concrete pads for clamshell hangers, a 60,000-square-foot maintenance hardstand, and a 9-module aviation ammunition supply point.³²¹ On the 25th, MWSS-271 started to arrive at Tanajib and prepared to support air operations there.³²²

1st Force Service Support Group

The Iraqis responded to 3d MAW’s bombs by shooting free-rockets-over-the-ground (FROG) missiles at Mishab on the 17th and the 19th, while at Jubayl, the drivers of Saudi Motors reacted by quitting their jobs. To lure the civilians back to duty and to keep the supplies moving to Kibrit, General Brabham authorized for each operator a gas mask and poncho for protection against a gas attack, and extra pay. Almost all of the drivers returned, but it was clear that Saudi Motors needed Marines to accomplish the mission fully. Always one step ahead of his fickle foreign drivers, General Brabham had on hand the 600 Reservists from the 6th Motor Transport Battalion, who upon arrival, received the four-hour United Parcel Service training course given to commercial drivers in the United States.^{323*} As the pool of trained and dependable Marine operators grew,

*LtCol James P. Collery, the 6th Motor Transport Battalion executive officer and an employee of United Parcel Service, brought the driver training course to Saudi Arabia. On his last day at the office before mobilization, Collery decided to pack the course in his personal belongings, just in case it was needed. It was needed. (Woodson comments)

Lieutenant Colonel Walters, the commanding officer of the 6th Motor Transport Battalion, replaced the least reliable civilian drivers. Despite these problems, Saudi Motors averaged 250 trips a day, moved 50,000 short tons of cargo, and succeeded in stocking Kibrit.³²⁴

At Jubayl, GSG-1 modified weapons systems while at Mishab, GSG-2 opened the port. Taking some of the pressure off Saudi Motors, the MV *Mallory Lykes*, the first ship to venture into Mishab, dropped anchor on 25 January. Dodging FROG missiles, GSG-2 unloaded ammunition, which saved Saudi Motors 500 trips over the distance between Jubayl and Mishab.* From GSG-2, Colonel Hampton pushed ammunition to FASP-3 at Kibrit. On the 27th, an Army ROWPU barge docked at Mishab and three days later began producing water.³²⁵ Unfortunately, some of the millions of gallons of oil that the Iraqis dumped into the Persian Gulf fouled the filters of the Army's ROWPUs, which sucked in raw water from the surface of the Gulf. To counter the problem, the GSG-2 engineers figured a way to draw the raw water from below the surface and kept the Marine Corps ROWPUs operating as the primary source of water in northern Saudi Arabia.^{326**} At Jubayl, GSG-1 worked through Scud alerts and adapted equipment to the situation. Ordnance specialists from the 2d Maintenance Battalion installed applique armor on the 53 M60A1 tanks of the 8th Tank Battalion and helped field new M1A1 Abrams tanks to the 2d Marine Division. Together with a team from the United States, optics technicians modified 476 day trackers and 153 night-sight missile guidance systems on TOW II launchers.³²⁷

To manage the predicted 108,000 Iraqi prisoners of war, General Brabham ordered Lieutenant Colonel Linden L. Sparrow to build and operate a camp near Kibrit, which could temporarily hold as many as 40,000 for collection by the U.S. Army.³²⁸ Sparrow, who reported to Colonel Hampton at GSG-2, began activating CSSD-91 on the 12th, and sent a Reserve military police detachment from Pittsburgh to Kibrit. Joining the military policemen on the 17th, the Seabees of NMCB-5 used a U.S. Army manual to lay out a camp, divided into three holding pens and a processing area. The Seabees dug in tents, built a mess hall, and erected guard towers around a 3,000-foot by 1,500-foot swath of ground.³²⁹

Back at Jubayl, Lieutenant Colonel Sparrow collected people and equipment to operate the camp and sent forward materials to finish building the facility. At Kibrit, working parties of Marines strung concertina wire around the camp to pen in the prisoners. To distribute water in the camp, the CSSD Marines scrounged 500-gallon water tanks from a Saudi company and linked them together with rickety plastic pipes. For prisoner sanitation, the Seabees dug slit trenches and, taking the advice of U.S. Army specialists who were knowledgeable about Arab bathroom behavior, built special wooden heads designed to give the user pri-

*After the Iraqi missile attacks on Mishab, the GSG-2 Marines and sailors referred to the area near the pier as "The FROG Pond." (Hampton comments)

**According to LtCol Skipper, the commanding officer of the 8th Engineer Support Battalion, "From 14 January to 2 March, the Marine ROWPUs produced 3.75 million gallons of potable water." (Skipper comments)

vacy. In the processing area, Sparrow established an assembly line system where prisoners were to be searched, interrogated, checked by a doctor, given a blanket, provided a bottle of water, and fed rice and beans before entering the holding areas. During the process, all personal effects were to be screened, inventoried, and immediately returned, except for weapons and items having intelligence value.³³⁰ On 23 January, the DSC sent CSSD-91 its first three Iraqi patrons, whom U.S. Army specialists processed, held, and shipped south.³³¹

The Direct Support Command

With the ground war scheduled to start in early February, General Krulak continued preparing the DSC to support the 1st and 2d Marine Divisions. Saudi Motors filled the ammunition supply point with 15,800 tons of munitions and the DSC's two hospitals, with 470 beds for potential patients between them, opened nine operating rooms. The well repaired by the Seabees produced 80,000 gallons of water per day, while the DSC's maintenance detachment modified 15 M60 Tanks and 26 bulldozers to perform breaching operations for the divisions.³³² With the construction of Kibrit completed, the burden on the DSC's engineers, who had been working around the clock, eased and allowed them to continue with their innovative preparations for the ground war.^{333*}

Knowing that penetrating the Iraqi minefields was the most critical effort in I MEF's attack, Lieutenant Colonel Skipper, the commanding officer of the 8th Engineer Support Battalion, modified his battalion's D-7 bulldozers for the task. Immediately after the battalion's arrival in December, Skipper ordered his staff to design a way to protect bulldozer drivers from small arms fire and shrapnel, and to devise a wedge to plow through the minefields. The Marines purchased the armor for the protection of the driver from the Saudi economy while Zahaid, the Caterpillar dealer in Jubayl, fashioned a wedge-shaped blade for the front of the bulldozer, similar to the design used by the Israelis and Soviets.^{**} In mid-January, the engineers tested the first armored D-7 prototype which proved partially successful. The operator could hold the heavy blade level without digging it into the sand and the bulldozer engine did not overheat from the extra weight, however, the blades of the wedge were too short. As planned, the forward motion of the wedge pushed the mines to the side of the road, but after the blades passed by, the mines would roll back into the lane. A simple extension of the length of the blades solved this problem and Lieutenant Colonel Skipper ordered four wedges from Zahaid. The engineers called the new armored D-7 bulldozers with the wedge-shaped-blades, "Ninja Dozers."³³⁴

While the DSC prepared to support the attack, the 2d Marine Division deployed north from its positions at the Triangle to assembly areas south of

*LtCol Skipper commented that the blackout ordered by Gen Krulak at the beginning of the air war was "... one of those great ironies of the war..." and "provided a rest period for the 7th and 8th Engineer Support Battalions." (Skipper comments).

**In late January, the Marine Corps Logistics Base, Albany, Georgia, pushed armored kits to Saudi Arabia which protected the D-7 drivers.

Kibrit.³³⁵ After spending only about two weeks at Abu Hadriyah, DSG-2 moved 130 kilometers with the division to a position 70 kilometers south of the Kuwaiti border and 30 kilometers southwest of Kibrit.³³⁶ DSG-2's new logistics support area became known as Hobo Alley and located DSG-2 within DSC's logistic network.³³⁷ Starting on the 23d, the DSC routinely transported 30,000 gallons of fuel, 20,000 gallons of water, and 32 pallets of MREs a day to build-up DSG-2 stocks. The daily supply run, performed by the 8th Motor Transport Battalion, consisted of 18 LVs which made the 60-kilometer roundtrip from Kibrit.³³⁸ During this period, DSG-2's operations officer, Major Arthur H. Sass, joined the DSG and established support procedures which were nonexistent when the organization formed. Sass developed a CSS customer's service guide which published DSG-2's capabilities.³³⁹ To protect Hobo Alley from enemy air power, Major General Keys, the Commanding General of the 2d Marine Division, sent an anti-air defense team of 13 Marines armed with Stinger shoulder-fired antiair missiles to DSG-2.^{340*}

In preparation for the coming ground offensive, DSG-2 concentrated on increasing the 2d Marine Division's equipment readiness, but ran into problems. The DSG was the first source of repair parts for the 2d Marine Division which overwhelmed the supply detachment with requests.³⁴¹ For example, the 10th Marines placed 14 computer disks worth of requisitions on DSG-2, which lost 12 of the disks.³⁴² Moreover, in the face of the deluge of appeals for support, DSG-2 lacked repair parts in its supply block, which had only 440 of the 1,500 line items needed to support the division.³⁴³ To obtain the needed parts, DSG-2, as well as DSG-1, requested items from the DSC at Kibrit, which either filled the request or passed it on to Jubayl. GSG-1 either issued the item or requisitioned the part from the United States. To further aggravate the situation, automated supply and maintenance reports available in garrison were almost non-existent in Saudi Arabia. This caused units which were ignorant of the status of their original requests to reorder parts multiple times and further overload the system.** To combat the problem, the 2d Marine Division sent a liaison team, which carried copies of the lost 10th Marines requisition disks, to DSG-2 on the 25th and Captain Alan B. Will, DSG-2's supply officer, went to Jubayl to track down the needed repair parts.^{344***} In addition, Major Dalton J. Langlinais, DSG-2's main-

*The 3d MAW originally assigned the Stinger team to the 2d Marine Division. (Donnelly comments)

**The 10th Marines reported an 8 percent fill rate on parts during February 1991. (10Mar ComdC Feb91, Sec 2)

***Capt Will described the supply situation as frustrating. As an example, he related a verbal exchange between himself and the executive officer of one of the artillery battalions, who was checking on the status of his battalion's orders. "I called customer service at Al Jubayl and talked to the officer in charge. They did not have a record of the repair parts request. I informed the XO of that. The XO informed me that I 'better stay on top of the requisitions because his lieutenant was pretty big and played football at the Naval Academy.' I informed the XO that I was pretty good with a pistol. He responded with, 'Captain, I have your grid square.' " (Maj Alan B. Will, comments on draft, 25Nov96, Author's Files)

tenance officer, manually managed the maintenance system, judiciously used parts from broken equipment to fix other items, and was thankful that the division's equipment, much of which came from MPSRon-1, generally was in good condition.³⁴⁵

On the 21st, the Tiger Brigade arrived near Kibrit and significantly enhanced the firepower and mobility of the 2d Marine Division, but increased the logistic burdens on DSG-2. The Tiger Brigade added 4,212 soldiers, 354 tracked vehicles, and numerous trucks, generators, and HMMWVs to I MEF, which had agreed, after numerous meetings with ArCent, to provide food, water, personnel support items, general medical support, and common-repair parts to the Tigers. ArCent had agreed to continue distributing clothing, organizational equipment, ammunition, and Army-unique repair parts to the brigade.^{346*} On the 25th, Colonel Donnelly sent Captain Robert E. Tobin as his liaison officer to the U.S. Army 502d Support Battalion, which provided direct combat service support to the Tiger Brigade.³⁴⁷ The 502d, commanded by Army Lieutenant Colonel Coy Scoggins, began pulling supplies from the DSG, but lacked the trucks to pull and push supplies to the brigade. To make up for the shortfall, the Tiger Brigade requested trucks from ArCent.³⁴⁸

Between 16 and 23 January, the 6th Marines moved north, accompanied by MCSSD-26, which moved in five increments to a position 40 kilometers south of Kibrit.³⁴⁹ Lieutenant Colonel Wittle called the new location RRP Laporte and continued to blend the capabilities of MCSSD-26 with the operational requirements of the 6th Marines.³⁵⁰ In response to a request from his MCSSD commander and in recognition of the need to protect his source of supply, Colonel Lawrence H. Livingston, the Commanding Officer of the 6th Marines, attached a section of TOW missile HMMWVs from the 8th Tank Battalion to MCSSD-26. The TOW detachment gave Wittle the ability to move independently on the battlefield and to respond rapidly to requests for support from the regiment without needing its protection. Besides bolstering the defense, Wittle used the TOWs for reconnaissance and scouting missions.³⁵¹

At RRP Laporte, MCSSD-26 increased and improved its level of combat service support for the 6th Marines which grew in size with the assignment of attachments and direct support units.** During the second half of January, Lieutenant Colonel Wittle, believing that the ground war would soon begin, pressed to fix all equipment, especially the weapons systems belonging to the regiment and its assigned units. Items that could not be repaired were swapped for operational equipment held in either the Prepositioned War Reserve or the Quick Exchange Program.³⁵² The daily amount of supplies delivered to the 6th Marines

* According to Col Donnelly, the relations with the Tiger Brigade were reciprocal: "The Tiger Brigade provided a full communications suite to DSG-2 to integrate communications . . . [and] . . . also provided unique M-1 tank maintenance capability. . . The support provided and received was a tremendous demonstration of interservice cooperation." (Donnelly comments)

**Major units either attached to or in direct support of the 6th Marines were the 8th Tank Battalion, Task Force Breach A, and the 2d Battalion, 10th Marines.

almost doubled, to an average of 13,000 gallons of water, 9,000 gallons of fuel, and 32 pallets.³⁵³ To expedite the refuelling of the growing number of vehicles in 6th Marines, Lieutenant Colonel Wittle adopted the rapid refuelling system developed by CSSD-10. An eight-man team could set up the system from the back of an LVS in five minutes and refuel 60 assault amphibious vehicles in an hour. MCSSD-26 practiced rapid refuelling with the regiment, until it became second nature for both customer and supplier.^{354*} To ensure good communications with the regiment, Lieutenant Colonel Wittle dispatched Captain Scott A. Allen, a supply officer with extensive infantry battalion experience, to act as a roving customer service representative. Allen often returned from a liaison trip with a fist full of support requests.³⁵⁵

Between 17 and 23 January, the 8th Marines, commanded by Colonel Larry S. Schmidt, moved to assembly areas south of Kibrit. On the 22d, Lieutenant Colonel Head relocated MCSSD-28 to a position 30 kilometers southeast of the DSC and 14 kilometers due east of the regimental command post. At the assembly area, MCSSD-28 continued to focus on refining tactical movement, security, and resupply capabilities. MCSSD-28's operations officer, Major James M. McNeal, and Captain Tony L. Bumgarner, the tactical security officer, conducted intensive day and night tactical movement and resupply exercises that honed the mobile's ability to support the 8th Marines.³⁵⁶ On the 29th, the 1st Battalion, 8th Marines, and the 2d Battalion, 4th Marines, received detachments from the 2d Assault Amphibious Vehicle Battalion while the 3d Battalion, 23d Marines, obtained 32 5-ton trucks from the 4th Truck Company. The addition of trucks and amphibious assault vehicles made the regiment fairly mobile, but increased the amount of fuel and maintenance support required from MCSSD-28. In addition, the number of trucks allocated to the 8th Marines was not enough to accomplish its mission, a shortfall which hampered rapid movement and caused the regiment to look to MCSSD-28 for help.³⁵⁷

During this period, on 25 January, Colonel Powell, the DSG-1 commander, published his plan to move 110 kilometers northwest to Al Qarrahto in support of the 1st Marine Division. This was the location that the DSC had surveyed in December and found littered with dead camels. Colonel Powell intended to stage enough supplies near the division's assembly areas to sustain the assault deep into Kuwait. To accomplish this goal, Powell ordered CSSD-10 to establish a combat service support area at Qaraah, provide direct support to elements of Task Force Shepherd, the division's screening force along the border, and to continue its general support mission. In order to execute the plan with the limited amount of available trucks, Powell ordered CSSD-10 and the recently activated CSSD-13 to start immediately shuttling people and equipment to the new location ahead of the division.³⁵⁸

*Maj Warker added that resupply procedures were explained and practiced night and day with each of the supported units. This would entail defined security measures for entry into supported units defensive perimeters or designated resupply grid coordinates: "We would attach chemical lights to fuel nozzle points, resupply vehicles with MREs, and water points when in the 'Jiffy Mart' mode." (Warker comments)

Colonel Powell had established CSSD-13 to support Task Force Taro, which was the 1st Marine Division's third maneuver element. General Myatt ordered Taro, commanded by Colonel John H. Admire, to conduct a helicopter assault and capture MEF Object A, the Al Jaber Air Base in Kuwait.³⁵⁹ Colonel Admire moved Task Force Taro, which consisted of the three lightly armed organic battalions of the 3d Marines to Ras Al Mishab where the brigade trained for its heliborne assault. A detachment of Reserve landing support specialists from Company B, 4th Landing Support Battalion, 4th FSSG, Lathrop, California, had joined Taro on 14 January, and began training with the task force.³⁶⁰ Five days later, Captain Ritchie had activated CSSD-13 at Mishab by combining the Reserve Marines and a group of active duty red-patchers from CSSD-141.*

Prior to activation, Captain Ritchie constructed a table of organization for eight officers and 178 enlisted Marines, but was only able to collect four officers and 76 enlisted men, together with a limited amount of equipment.³⁶¹ Because of the lack of people, CSSD-13's landing support specialists instructed and supervised Taro's Marines, who performed the labor-intensive chores of hooking external loads to helicopters and providing landing zone security, functions normally performed by fully staffed landing support organizations. Even with the training, Taro's Marines were uneasy with the idea of dangling their equipment and supplies underneath, and preferred to load things inside the aircraft to enhance speed and maneuverability of the helicopters. To counter this concern, Ritchie pointed out that external loads were designed to deliver supplies and equipment to landing zones quickly while minimizing the aircraft exposure to enemy ground fire. For equipment, CSSD-13 gathered nets and slings, an LVS, two 5-ton trucks, and a couple of HMMVWs. The lack of forklifts in the landing zones during the initial phase of the planned heliborne assault, forced Captain Ritchie to create man-portable supply packages. For example, CSSD-13 used bottled water in boxes instead of 500-gallon bladders and packed medical supplies in ammunition cans.

Captain Ritchie and First Lieutenant Darryl L. Smith, the CSSD's landing zone support area officer, formed a helicopter support group to coordinate landing support operations during the assault. To control HST operations at each landing zone, CSSD-13 would send receiving teams with each of the two assault battalions and a third group with the reserve battalion to unload helicopters, set up supply dumps, and evacuate the wounded. Ritchie planned to lead the receiving team of the first battalion into Al Jaber, while Smith intended to run the departure landing zone.³⁶² The lieutenant wanted to place CSSD-13 next to CSSD-10 in order more easily to obtain supplies and to be near an airfield or FARP to maximize helicopter flight time and availability. Smith prepared to package water, fuel, MREs, ammunition, and medical supplies to maximize delivery during the first helicopter wave, since it was doubtful that subsequent waves would reach the objectives. Captain Ritchie sent to Qaraah his engineer officer and elements of

*These Marines belonged to Company C, 1st Landing Support Battalion, 1st FSSG, which was commanded by Capt Burke during Desert Shield. Burke commanded these Marines in CSSD-141 where they had trained extensively with Task Force Taro at the Cement Factory Ridge. (Burke comments)

CSSD-13 to find a suitable place for staging.³⁶³

On the 26th, Lieutenant Colonel Kelly led CSSD-10's security detachment and engineers together with a group from CSSD-13, headed by Captain Sione L. Kava, a Reserve engineer officer from the Pacific island of Tonga, to Qaraah to establish combat service support areas.³⁶⁴ This movement relocated both CSSDs near the border well in advance of the 1st Marine Division's main body.³⁶⁵ Faced with the conflicting tasks of moving CSSD-10, supporting the division from two locations, and assisting the division reposition, Kelly relocated his CSSD in increments which took five days to complete.³⁶⁶ Major Lucenta, the CSSD's operations officer, who planned the complex relocation, calculated that CSSD-10 needed 300 LVS-loads to move, but only possessed 70 dragon wagons to accomplish its mission.³⁶⁷ The gravel plains at Qaraah were located near a dirt air strip, 40 kilometers southwest of the heel of Kuwait, and east of a desert road that ran north to the border and south to the Kibrit road. Only Task Force Shepherd and elements of the 1st Battalion, 25th Marines, lay between the border and CSSD-10. Less than a week earlier, DSC's 7th Engineer Support Battalion built a mock combat service support area at Qaraah as part of I MEF's deception plan.* On arrival, CSSD-10's engineers worked around the clock to expand the existing berms and bunkers into to a real combat service support area that would eventually cover 10 square kilometers.³⁶⁸ Moving near the airfield and closer to the border, Captain Kava set up a staging area to send supplies by helicopter to Task Force Taro.³⁶⁹ On the 27th, the 8th Motor Transport Battalion began pushing water, fuel, and MREs to both CSSDs.^{370**}

Iraq Attacks Near Qaraah and Khafji 29-31 January 1991

*Khafji was one of a series of border engagements at the end of January that took Schwarzkopf and his top commanders completely by surprise.*³⁷¹

On 27 January, two U.S. Air Force F16 Fighting Falcon multi-role jet aircraft attacked a motorcade near the southern Iraqi city of Basrah and just missed

*MCSSDs -11 and -17 planned to participate in a deception plan that would simulate a logistics buildup north and west of the "elbow." Neither organization executed the plan. The "elbow" was the point, 70 kilometers inland from the Persian Gulf, where the east-west Saudi-Kuwaiti border turned northwest. (Winter comments); GSG-1's air delivery platoon conducted air drops along the border as part of the deception operations. (1st FSSG ComdC Dec90-Feb91, Sec 2)

**During this period, the 1st Marine Division conducted the first two combined arms raids of the war. CSSD-10 sent food, fuel, and water to support the raids, while DSG-1 coordinated the heavy equipment hauling capabilities provided by the DSC's 8th Motor Transport Battalion. (Col Richard Kelly intvw, 10Apr96, (Oral HistColl, MCHC, Washington, D.C.); Col Thomas S. Woodson intvw 19Mar96 (Oral HistColl, MCHC, Washington, D.C.); DSG-1 ComdC, Jan 91; 8th Motor Transport Battalion Dispatch Log, 22Jan91)

killing Saddam Hussein. The infamous dictator of Iraq was returning to Baghdad after reviewing plans for a surprise attack on Saudi Arabia. Saddam intended to inflict casualties on the coalition forces, humiliate the Saudi military, and stir up political opposition to the war in the United States. The Iraqis aimed to launch the *3d Armored Division* across the border south of Al Wafra, where it would swing east to capture the Port of Mishab. The *1st Mechanized Division* would protect the right flank of the attack by crossing the border above Qaraah, and the *5th Mechanized Division* would leap across the border on the left and seize the Saudi town of Khafji, just 35 kilometers north of the attack's objective, the Port of Mishab. The Iraqi *III Corps Headquarters* would coordinate the attack, which was scheduled for 29 January.³⁷²

Just south of Al Wafra on the 29th, Colonel Stephen A. Tace, the DSC operations officer, led a survey team to look for a location to establish a transfer point.* General Krulak wanted a spot as close to Kuwait as possible where the DSC could stock two days of supplies to sustain operations in Kuwait. After scouting the area along the border, the DSC team drove to Kibrit, without incident, but planned to return to the border the next day to complete the survey.³⁷³ Arriving at his office, Colonel Tace called the MEF G-4 to discuss some routine business and was told to grab his helmet and flak jacket and to get out of the area because Iraqi armor was bearing down on Kibrit. Tace raced to the combat operations center, thinking along the way about the huge roman candle Kibrit would make if the Iraqis blew up its 15,800 tons of ammunition and 1.8 million gallons of fuel. At the operations center he tuned in to the 2d Marine Division's command net and pieced together the situation. The Iraqis were indeed attacking along the border and Kibrit was in danger.³⁷⁴

General Krulak had always been concerned that the Iraqis would learn about Kibrit, attack the exposed base, destroy the MEF's ammunition, and dislocate the offensive.** After learning about the Iraqi mechanized attack, Krulak feared that the middle prong of the assault was indeed aimed at Kibrit. Krulak ordered a 100 percent alert and focused the DSC's defense, which consisted mainly of AT-4 hand-held anti-tank launchers and small arms. Every Marine, male and female, rapidly responded to the crisis, grabbed his or her weapon, and took a place on the hastily formed defensive line. The Saudi and Qatari force to the north that supposedly protected the DSC from attack, had departed the area and left the Americans to their own resources.*** Around midnight, the Marines of CSSD-91,

*Other members of the survey team were Col Donnelly, the DSG-2 commander LtCol Thomas S. Woodson, the commanding officer of the 8th Motor Transport Battalion and LtCol Charles O. Skipper, the 8th Engineer Support Battalion commander.

**Gen Krulak commented that "General Boomer made a tremendous decision, a very brave decision to move his combat service support forward, . . . the one thing that probably should have been done, that wasn't, was to bring some forces up with him." (Krulak Comments)

***The Qatari and Saudi forces were responsible for screening the area north of the Kibrit-Mishab road to the Saudi-Kuwait border. (Krulak comments)



Photo courtesy of LtGen James A. Brabham, Jr.

Diagram shows Iraqi incursions of 29 January. Saddam Hussein intended to start the ground war with a three-pronged attack into Saudi Arabia. These attacks threaten CSSD-10 at Al Qaraah, the DSC at Kibrit, and GSG-2 at Mishab.

who were closer to the border than the DSC, put all of their shotguns, rifles, and machine guns into a pile, blew them up with C-4 explosives, and then fell back to Kibrit to avoid capture. Krulak sent other troops to the road to guide the CSSD-91 personnel into CSSA-1.*

Having no substantial combat power in front of his position, General Krulak called General Keys and requested help from the 2d Marine Division.** Keys immediately dispatched a company of M1A1 tanks from the Tiger Brigade to protect the base.³⁷⁵ At the 8th Motor Transport Battalion's motor pool, which lay north of the ammunition dump, the 29th was a pitch-black night made even

*Gen Krulak commented that there was a good lesson to be learned from CSSD-91's retreat. He said: "These are the kinds of stories that rarely get out, but its those types of things that, we as Marines, need to think about. When you make the decision to put your forces far forward, with minimal protection, then you need to understand that there are dangers involved with that." (Krulak comments)

**During the night of the 29th, normal communications between the DSC and the 2d Marine Division were down. Gen Krulak's driver, Sgt Slick Olson, used his Position Location Reporting System (PLRS) to establish a link with the division's combat operations center. Krulak then requested support from the 2d Marine Division. (O'Donovan comments); Additionally, the DSC used MCSSD-26 as a communications link with the 6th Marines in order to confirm enemy sightings and friendly unit locations. (Warker Comments)

more jittery for the Marines by the false alarm of an Iraqi gas attack. Not aware of the Iraqi armored attacks, but acutely sensitive to the battalion's closeness to the border and the danger to his troops if the nearby ammunition dump went up, Major Edwin Fielder, Jr., the battalion operations officer, was wide awake at the combat operations center. He became even more concerned when he heard the sound of unidentified tanks clanking by his position in the dead of night. After listening to the tanks for a moment and talking with the DSC, Fielder decided that the tanks were friendly since they were moving north and away from Kibrit. Indeed, the tanks heard by Major Fielder were from the Tiger Brigade moving to protect the DSC.^{376*}

Leaving Qaraah on the 29th, Lieutenant Colonel Kelly drove to CSSD-10's rear location inside the Triangle at Crusher Road. Upon arrival there, he learned from the 1st Marine Division's tactical and intelligence nets that an Iraqi armored column was staging in southern Kuwait for a possible attack on either Kibrit or Qaraah. Kelly immediately ordered all AT-4s, LAAWs, crew-served weapons, and ammunition gathered and loaded for an emergency run to the latter position. The CSSD's chaplain organized a three-truck convoy which sped towards the border. Arriving after dark, Kelly deployed all of his Marines along the berms protecting the CSSD. Captain Dennis Muller's lightly armed, but superbly trained security detachment anchored the defense. Brigadier General Thomas V. Draude, the 1st Marine Division assistant commander, joined CSSD-10 to monitor the situation and provided some reassurance to Kelly and his defending Marines that they were not alone. CSSD-10 remained on the berm for the remainder of the night, moved in and out of chemical defense levels 2 and 3 (MOPP-2 and 3), and watched flashes in the sky above the battle raging just a few kilometers north, along the border at Observation Post 4 (OP-4).^{377**} CSSD-10 did not engage the Iraqis, but, the 3d MAW Super Cobra attack helicopters killed two T62 tanks less than two kilometers from CSSD-13.³⁷⁸ The next morning, Kelly dispatched the graves registrations section to recover 11 Marines killed by friendly fires in two separate incidents and ordered Major Lucenta, CSSD-10's operations officer, to continue building Qaraah.³⁷⁹

One hundred kilometers to the east near Mishab, Captain Ritchie, the CSSD-13 commander, received a surprise request from Task Force Taro to push

*Before moving into protective positions, the Tiger Brigade drew tank ammunition from the DSC's Ammunition Supply Point. (O'Donovan comments)

**The higher the MOPP Level the greater the threat of chemical attack. There are four levels of MOPP—Mission Oriented Protective Posture—which require the wearing of different protective items of clothing.

Level 1: Consists of wearing a protective suit (trousers and jacket and carrying boots, gloves, and mask with hood).

Level 2: Adds the overboots to be worn with the gloves and mask, with hood still to be carried.

Level 3: Adds the wearing of the mask and hood.

Level 4: Requires the wearing of the entire outfit, including the gloves. (Quilter, *With I MEF*, p. 96)

immediately enough fuel, water, MREs, and ammunition for an infantry company, and 50 TOW missiles, to the Saudi border town of Ras Al Khafji.³⁸⁰ On the night of the 29th, a brigade from the Iraqi *5th Mechanized Division* crossed the border from Kuwait, captured Khafji, trapped two reconnaissance teams from the 1st Marine Division, and threatened Mishab and Kibrit.³⁸¹ In response to the Iraqi invasion, Arab forces from the Joint Forces Command East moved towards Khafji to retake the town. Upon hearing of the Iraqi attack, Colonel Admire dispatched two combined anti-armor teams (CAAT), an artillery battery, and two TOW sections to assist coalition forces retake the town and requested combat service support from CSSD-13.³⁸²

At Mishab, Captain Ritchie had a number of problems to overcome before honoring Colonel Admire's request. His newly formed CSSD was designed to provide helicopter support and was not equipped to provide ground support. In addition, half of CSSD-13 was at Qaraah. Notwithstanding the drawbacks of the situation, Ritchie immediately requested a refueller from DSG-1 which misinterpreted the request as a permanent equipment transfer to Task Force Taro and refused to send the refueller. The DSG recommended that Taro obtain its refueller from GSG-2. Instead, Captain Ritchie enlisted the help of friends in the 7th Engineer Support Battalion. They gave him a 500-gallon fuel bladder and a pump, and buddies in the 7th Motor Transport Battalion lent him a trailer to haul ammunition. At FASP-3, the ammunition technicians refused to issue munitions to CSSD-13. Frustrated, Captain Ritchie drove home the point that Mishab, to include its ammunition supply point, was now within Iraqi artillery range. Convinced by Captain Ritchie's irrefutable logic, the technicians finally honored the CSSD-13 request.³⁸³

After collecting equipment and supplies, Captain Ritchie hustled his two-truck supply convoy towards Khafji.³⁸⁴ Arriving on the evening of the 30th, CSSD-13 set up a refueling point less than three kilometers south of the Iraqi-held town along the coastal highway and just north of the point where Taro had planted explosives to cut the road, if forced to withdraw. Ritchie's mini-mobile parked directly behind Taro's forward CAAT teams, which were dangerously low on fuel and close to the enemy. Ritchie spent the next 14 hours refueling and distributing MREs and bottled water to the CAAT teams which sent vehicles back for fuel and resupply, as the situation allowed.³⁸⁵ At noon on the 31st, Task Force Taro withdrew its CAAT teams after Saudi and Qatari forces recaptured Khafji and rescued the 12 reconnaissance Marines.³⁸⁶ CSSD-13, totally depleted of supplies, withdrew with the CAAT teams after successfully accomplishing its unexpected mission.³⁸⁷

After the Iraqi attack on 29 January, General Keys ordered the 6th Marines to move to positions 40 kilometers northwest of Kibrit and 26 kilometers south of the border to screen I MEF against further Iraqi probes into Saudi Arabia.³⁸⁸ On 30 January, Colonel Livingston, the regimental commander, rapidly deployed two mechanized battalions; the 2d Battalion, 10th Marines; a company from the 2d Tank Battalion; and a portion of MCSSD-26 near the Kuwaiti border.³⁸⁹ When the word came to deploy, Lieutenant Colonel Wittle rapidly gath-

ered together all available fuel, water, and MREs and traveled north with the regiment. When a vehicle broke down, Wittle took the majority of the convoy forward while leaving a small group behind under the command of Captain Peter M. Warker.* After dark and after fixing the broken vehicle, Warker followed the tracks from Wittle's convoy to find his new location. Along the way, an unidentified mechanized force rapidly approached the little convoy from both sides creating a very dangerous moment. Knowing that both friendly and enemy units were in the area, Captain Warker tensely held fire and was relieved when a Saudi soldier "popped out" of one of the approaching armored vehicles and identified himself. After the encounter with the Saudis, Warker's group joined Lieutenant Colonel Wittle, who arranged the whole convoy into a circular defensive position. The Marines of MCSSD-26 spent the remainder of the night at MOPP-3, nervously listening to unidentified mechanized sounds passing just outside of visual and thermal sight range.³⁹⁰ Wittle named the new location RRP Brown and was joined by the remainder of the CSSD over the next two days.³⁹¹

The Iraqi attacks caused General Myatt, the 1st Division commander, to order Task Force Ripper to prepare a counterattack and the 4th Marines to move to Qaraah. At 2000 on the 30th, Colonel Fulford, the task force commander, directed his battalions to prepare to advance and to smash any Iraqi forces moving towards Khafji. Accordingly, Captain Winter ordered MCSSD-17 to be ready to move north in support.³⁹² At noon on the 31st, the crisis at Khafji passed and Ripper and MCSSD-17 relaxed and remained in position. To be ready for a repeat Iraqi performance, Captain Winter conducted a route reconnaissance to Khafji.³⁹³

In the meantime, on the 30th, the 4th Marines, since 22 January under Colonel James A. Fuls, the former 1st Division operations officer, had rushed to Qaraah with the mission of defending the border area from further Iraqi aggression.³⁹⁴ The 4th Marines was the division's newly formed fourth maneuver unit, consisting of the headquarters element detached earlier in the month from the 1st FSSG; the 2d Battalion, 7th Marines; and the 3d Battalion, 7th Marines. The 11th Marines assigned the 3d Battalion, 12th Marines, to provide direct artillery support.³⁹⁵ To Colonel Powell, the DSG-1 commander, the 4th Marines was an additional burden that further overloaded his already strained ability to support the division. Until a plan could be devised to support the regiment, CSSD-10 would provide supply point distribution.³⁹⁶

In the final chapter of the Kafji battle, Captain Stephen H. Negahnquet, the platoon leader for the Explosive Ordnance Disposal (EOD) Platoon, 8th Engineer Support Battalion, sent Gunnery Sergeant Mickey Scholfield, Staff Sergeant Rydel, and Sergeant Michael R. Glass to Khafji to help clear unexploded ordnance. On 3 February, Scholfield and his team entered Khafji and linked up with engineers from the Saudi Arabian National Guard. Over the previous days, the Saudis had sustained 18 casualties while attempting to clear the vast amount of booby traps, unexploded ordnance, and arms caches that littered the area. The Marine EOD team ducked sporadic sniper, small arms, and artillery fire and

*Capt Warker was MCSSD-26's logistics officer until 4 February, when he became the mobile's operations officer. (MCSSD-26 Historical Collection)

cleared duds, booby traps, a few houses, and some Iraqi armored personnel carriers during the remainder of the day. The next day Chief Warrant Officer 2 Thomas A. Crawford arrived with three NCOs from the 7th Engineer Support Battalion, took charge of the clearing operation, and attached the EOD technicians to squads of Saudi engineers. The U.S./Saudi teams again dodged the intermittent sniper fire and continued with the clearing mission. The following day, Captain Negahnquet and Chief Warrant Officer 3 Thomas E. Bathory arrived at Khafji to supervise the final disposal effort. On the 7th, the Marine EOD team completed its tasks in Kafji, where it destroyed about 4,000 pieces of ordnance, cleared nearly 80 armored vehicles, and gathered many items having a technical intelligence value.³⁹⁷

Conclusion

*Set MOPP level two at 2145, downgraded to MOPP level 0 at 0630.*³⁹⁸

January ended with I MEF taking a deep breath after the Iraqi attacks across the border, continuing the air war against Iraq, and preparing for the ground war. On the 31st, General Krulak was close to reaching the goal of stocking seven days of supply at Kibrit to support the MEF and DSG-1 set up positions near the Kuwaiti border to sustain the 1st Marine Division. General Brabham kept Saudi Motors on the road and pushed ammunition to Kibrit from Jubayl and the newly opened port of Mishab. MWSG-37 pumped oceans of fuel to 3d MAW's attacking aircraft and together with the Seabees, prepared to support the relocations of the 3d MAW helicopters to northern locations. It was apparent to all, that the ground war was about to begin.

Flexibility and Forward to Attack Positions: 1-23 February 1991

Moving to the Attack

Many of the problems experienced during January carried over to February. Transportation issues seemed to overshadow other concerns due to the vast amounts of supplies, equipment, and personnel that needed to be moved. — Col Alexander W. Powell

At the beginning of the month, I MEF continued to prepare for the single-division penetration of Kuwait. General Moore pushed the 3d MAW's operations north; the 1st Marine Division staged its mechanized units near qaraah and conducted combined arms raids along the Kuwaiti border; and the 6th Marines guarded the border south of Al Wafra. The DSC completed stocking Kibrit for the attack and